

# EasyEDA Footprint Naming Rule Reference

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Draft: Guodong Xiao

Revise: Summving

Review: Atommann, Jiajun Shi, Stely, Jiaowoxiaolu

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## Footprint Naming Rule Annotations

1. Any data involved in the naming is obtained by the corresponding calculation formula or specification
2. Footprint naming only involves 2D dimensions, the package height (H) is not marked
3. Explanation of letter meanings in naming formats

[PKT]: Package Type

ADJ: Adjustment

ARRAY: Array

SMD: Surface mounted Device

TH: Through Hole Device

[Q1]: Represents the number of signal pins that the package should have(The number of pins of the device which contains remain pin(s)). In the absence of pin(s), use with Q2

[Q2]P: Pin, Q2 The actual number of pins of the device. Use when pin(s) are missing. Q1 is not necessarily the same as Q2. Q1 is the same as Q2, so the plug-in class doesn't have to write Q1, and the semiconductor class doesn't have to write Q2. Generally, Q1 without pin(s) is greater than Q2

[Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink

V: Vertical, External interface of the device is perpendicular to the PCB, the plug-in class name to use

H: Horizontal, External interface of the device is parallel to the PCB, plug-in class name to use

M: Male, plug-in class name to use

F: Female, plug-in class name to use

BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal

D[PD]: Pin Diameter, Take a decimal, when the datasheet annotation is two decimal places, carry a decimal. For example:mark of 1.42 mm, use 1.5 mm

[S]: Standard, Standard resistance capacitance size, For example:0402, 0603, 0805

LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins

L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal

W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal

R[PR]: Pin Rows, When both rows and columns are greater than 1, the uniform regular array distribution is used

C[PC]: Pin Columns, When both rows and columns are greater than 1, the uniform regular array distribution is used

P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default

S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time

FS: Front Side, The pins are mostly in the front

BS: Back Side, The pins are in the back

BI: BI-Directional, Bidirectional polarity

FD: Forward Direction, The polarity direction is from left to right

RD: Reverse Direction, The polarity direction is from right to left

CW: Clockwise, Indicates that when the origin is the center, the footprint pads are numbered counterclockwise by default. This parameter is used only when the pads numbered clockwise

TL: Top Left, The first pin of the footprint is in the upper left of the origin

TR: Top Right, The first pin of the footprint is in the upper right of the origin

BL: Bottom Left, The first pin of the footprint is in the lower left of the origin

BR: Bottom Right, The first pin of the footprint is in the lower right of the origin

L: Left, The first pin of the footprint is to the left of the origin

R: Right, The first pin of the footprint is to the right of the origin

T: Top, The first pin of the footprint is to the top of the origin

B: Bottom, The first pin of the footprint is to the bottom of the origin

PE[X]: Pin Empty, Indicates that the device pin X is empty. This parameter is not used when X is greater than 1

EP: Expose Pad/Extra Pad, For example:bottom heat sink pad. EP2.5 refers to the thermal pad of 2.5mm in length and width, and the size is only used in the same package with different EP sizes; If not square pad, default size is not written

EH: Extra Hole, Positioning hole, through hole. In the same package name, there are difference when using positioning hole

[SN]: Serial Number, Device family name. Use X instead of the variable parameter in SN.

[MPN]: Manufacture Part Number, The manufacturer's material name of the device

4. All dimensions are metric in mm.

- a. D[PD] takes one decimal place, and when two decimal places are marked, the maximum value is taken and one decimal place is carried out. If 1.42mm is marked, 1.5mm is taken

- b. BD[BD], L[BL], W[BW], LS[LS], EP, EH is taken as a decimal (0.1, rounded). The average is taken, and the unmarked average is calculated to obtain the average
  - c. P[PP], S[PS] Take two decimal places (i.e. 0.01)
- 5. Legal characters:
  - a. It's not SN or MPN: Supports only letters, Numbers, dash "-" and underscore "\_" and dot "." any other characters are illegal
  - b. SN or MPN: Follow the datasheet
  - c. All capital letters. No Spaces
- 6. The meanings of the parentheses "()", the brackets "[]", and the forward slash "/" in the naming rules:
  - a. the brackets "[]": That contains the variable properties. For example: size, quantity, packaging type, etc. brackets don't write in title. For example: [Q]P, [S], P[PP], S[PS], [PKT]
  - b. the forward slash "/": Said the meaning of "or", "/" don't write in title. For example: M/F, H/V
  - c. the parentheses "()": Said the attribute optional according to actual condition, don't write in parentheses in the title. For example: (L/R), (BI/FD/RD), ([SN/MPN])
- 7. The use of the underscore "\_" and the middle line "-" in naming rules:
  - a. The middle line "-" is used when different attributes belong to the same level: [Q]P-L[BL]-W[BW]-P[PP]-D[PD]
  - b. When use the underscore between different classes. For example: SMD/TH\_[Q]P; P[PP]\_[SN/MPN]

Specific format requirements refer to the below.

## **1. Resistor, Capacitor, Inductor, Crystal, Fuse, Diode**

### **1.1. Surface mounted Resistor, Capacitor, Inductor, Crystal, Fuse, Diode**

#### **1.1.1. Standard Surface mounted Resistor, Capacitor, Inductor, Crystal, Fuse, Diode, Light-Emitting Diode**

Naming format:

Resistor(R):

R[S]

For example: R0402

Capacitor(C):

C[S]

For example: C0603

Inductor/Bead(L):

L[S]

For example: L0805

Passive Crystal Oscillator(X):

X[S]

For example: X0603

Fuse(F):

F[S]

For example: F0603

Diode(D):

D[S]-L/R-(BI/FD/RD)

For example: D0603-L-RD

Light-Emitting Diode(LED):

LED[S]-(BI/FD/RD)

For example: LED0603-RD

Instructions:

1. S: Standard, Standard resistance capacitance size, For example:0402, 0603, 0805
2. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left

For example:

(C379107) D0402-BI

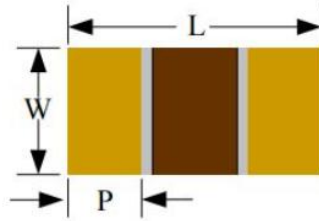


0402

Channel Ultra-low Capacitance ESD Protection



Datasheet



Dimension	Unit: Millimeters	
	Min.	Max.
L	0.90	1.10
W	0.42	0.62
p	0.15	0.35
H	0.25	0.45

### 1.1.2. Non-standard Surface mounted Resistor, Capacitor, Inductor/Bead/Filter, Fuse

Naming format:

Resistor:

Regular shape, regular arrangement of pins:

RES-SMD\_[Q]P-L[BL]-W[BW]

Irregular shape, pins arranged irregularly:

RES-SMD\_[SN/MPN]

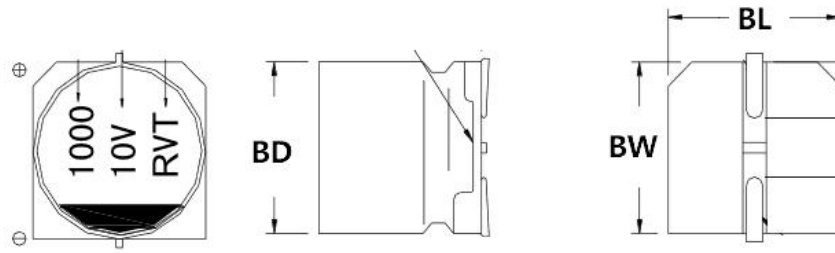
Capacitor:

Regular shape, regular arrangement of pins:

CAP-SMD\_[Q]P-L[BL]-W[BW]-(TL/TR/BL/BR)-(FD/RD)

The cylinder has a seat:

CAP-SMD\_BD[BD]-L[BL]-W[BW]-(FD/RD)



Irregular shape, pins arranged irregularly:

CAP-SMD\_[SN/MPN]

Inductor/Bead/Filter:

Regular shape, regular arrangement of pins:

IND/BEAD/FILTER-SMD\_[Q]P-L[BL]-W[BW]-(TL/TR/BL/BR)

Irregular shape, pins arranged irregularly:

IND/BEAD/FILTER-SMD\_[SN/MPN]

Fuse:

Regular shape, regular arrangement of pins:

FUSE-SMD\_[Q]P-L[BL]-W[BW]-TL/TR/BL/BR

Irregular shape, pins arranged irregularly:

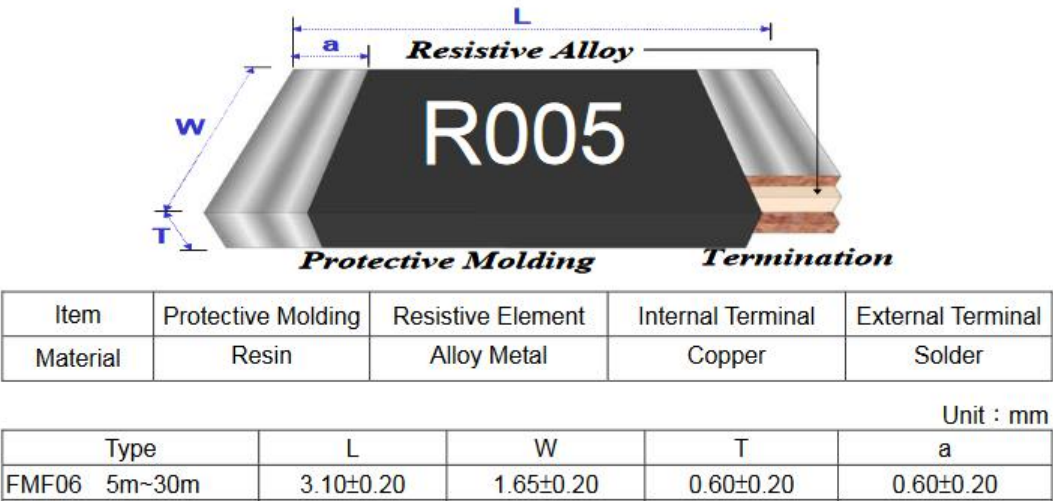
FUSE-SMD\_[SN/MPN]

Instructions:

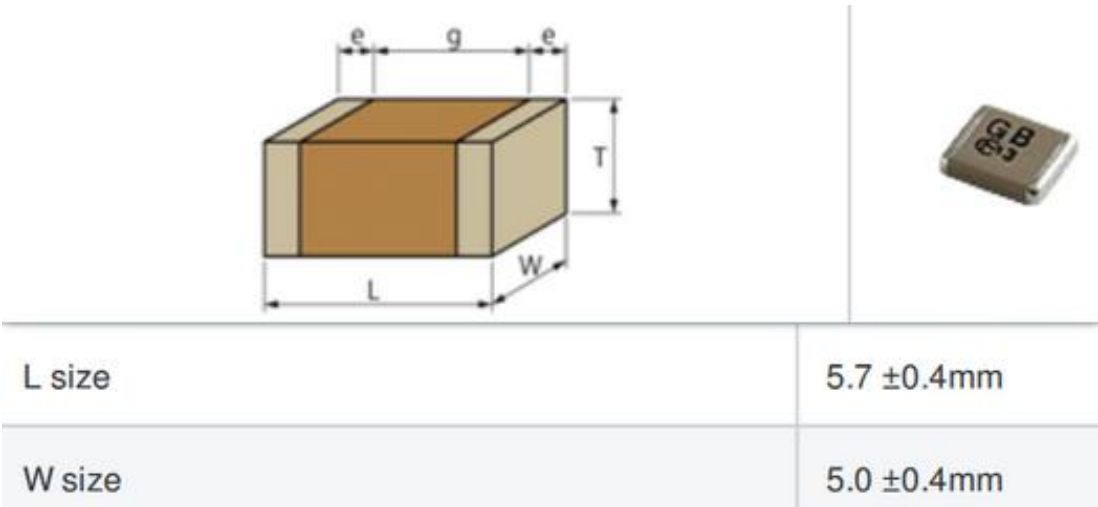
1. RES: Resistor, Resistor
2. CAP: Capacitor, Capacitor
3. FUSE: Fuse, Fuse
4. IND/BEAD/FILTER: Inductance/Bead/Filter, Inductor/Bead/Filter
5. SMD: Surface mounted Device
6. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
7. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
8. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
9. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
10. TL/TR/BL/BR: Left/Right/Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin

11. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left
12. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

RES-SMD\_L3.1-W1.7

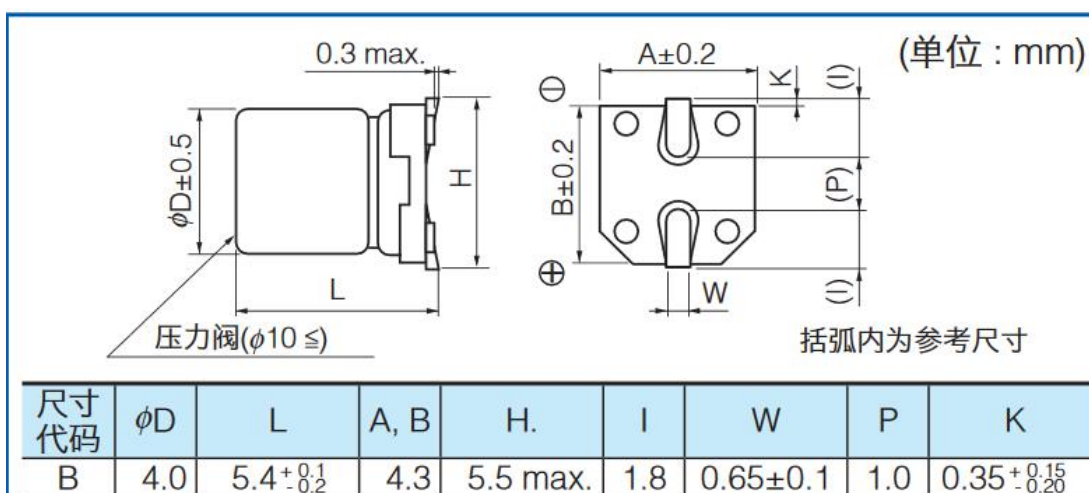


CAP-SMD\_L5.7-W5.0

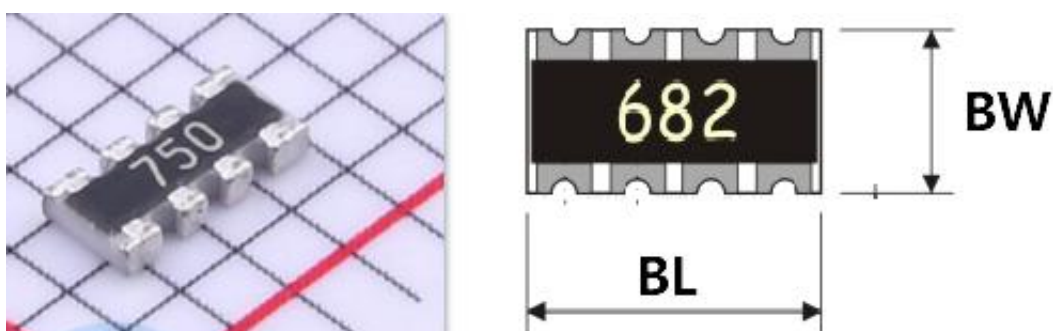


CAP-SMD\_BD4.0-L4.3-W4.3-RD





### 1.1.3. Standard Surface mounted Resistor Array, Capacitor Array, Inductor Array, Filter Array, Light-Emitting Diode Array



Naming format:

RES/CAP-ARRAY-SMD\_[S]-[Q]P-L[BL]-W[BW]-TL/TR/BL/BR

IND/BEAD/FILTER-ARRAY-SMD\_[S]-[Q]P-L[BL]-W[BW]-TL/TR/BL/BR

LED-ARRAY-SMD\_[S]-[Q]P-L[BL]-W[BW]-TL/TR/BL/BR-(BI/FD/RD)

Instructions:

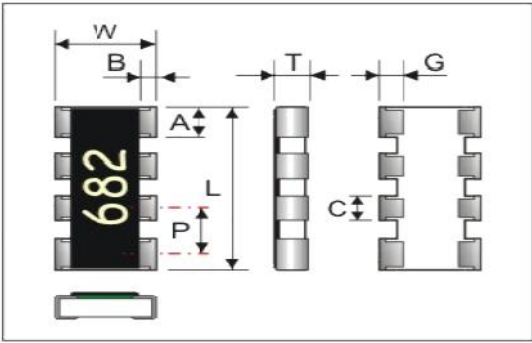
1. RES/CAP: Resistor/Capacitor
2. IND/BEAD/FILTER: Inductance/Bead/Filter
3. LED: Light-Emitting Diode
4. ARRAY: Array, Array package
5. SMD: Surface mounted Device
6. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
7. S: Standard, Standard resistance capacitance size, For example:0402, 0603, 0805
8. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
9. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal

10. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
11. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left

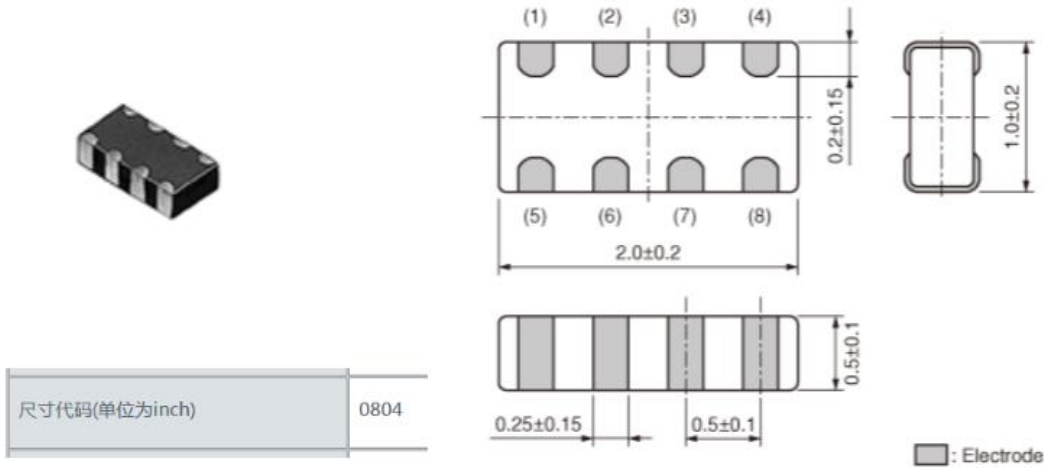
For example:

(C396858) RES-ARRAY-SMD\_0603-8P-L2.0-W1.0-BL

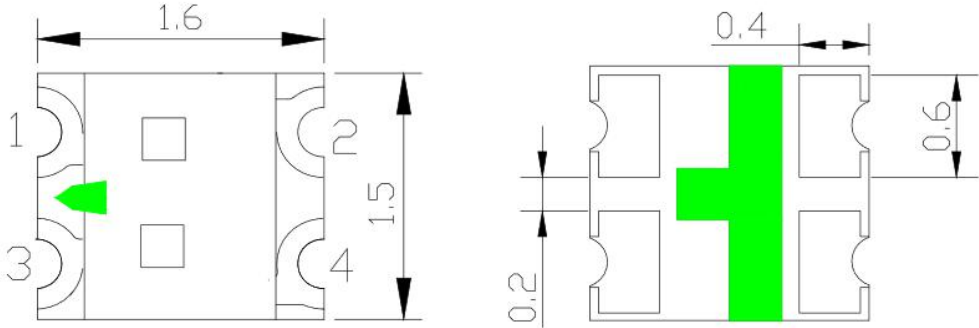
	WA04X	WA06X
L	2.00 ± 0.10	3.20 ± 0.10
W	1.00 ± 0.10	1.60 ± 0.10
T	0.45 ± 0.10	0.50 ± 0.10
P	0.50 ± 0.05	0.80 ± 0.10
A	0.40 ± 0.10	0.60 ± 0.10
B	0.20 ± 0.10	0.30 ± 0.10
C	0.30 ± 0.05	0.40 ± 0.10
G	0.25 ± 0.10	0.30 ± 0.20



(C91571) BEAD-ARRAY-SMD\_0804-8P-L2.0-W1.0-BL



(C154460) LED-ARRAY-SMD\_0603-4P-L1.6-W1.5-TL-RD



### 1.1.4 Non-standard Surface mounted Resistor Array, Capacitor Array, Inductor Array, Filter Array, Light-Emitting Diode Array

Regular shape, regular arrangement of pins naming format:

RES/CAP-ARRAY-SMD\_[Q]P-L[BL]-W[BW]-P[PP]-TL/TR/BL/BR

IND/BEAD/FILTER-ARRAY-SMD\_[Q]P-L[BL]-W[BW]-P[PP]-TL/TR/BL/BR

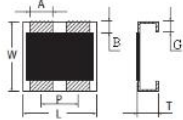
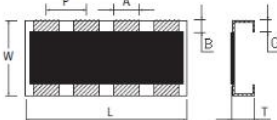
LED-ARRAY-SMD\_[Q]P-L[BL]-W[BW]-TL/TR/BL/BR-(BI/FD/RD)

Instructions:

1. RES/CAP: Resistor/Capacitor
2. IND/BEAD/FILTER: Inductance/Bead/Filter
3. LED: Light-Emitting Diode
4. ARRAY: Array, Array package
5. SMD: Surface mounted Device
6. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
7. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
8. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
9. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
10. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
11. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left

For example:

(C78520): RES-ARRAY-SMD\_4P-L1.4-W0.6-P0.40-BL

Flat Terminal								
2F01				4F01				
								

Type	Dimensions (mm)							
	L	W	T	A1	A2	B	P	G
2F01	0.80±0.10	0.60±0.10	0.35±0.10	0.30±0.10	/	0.15±0.10	0.50±0.05	0.15±0.10
4F01	1.40±0.10	0.60±0.10	0.35±0.10	0.20±0.10	/	0.15±0.10	0.40±0.05	0.15±0.10

### 1.1.5 Non-standard Surface mounted Diode, Rectifier bridge, Light-Emitting Diode, Discharge tube

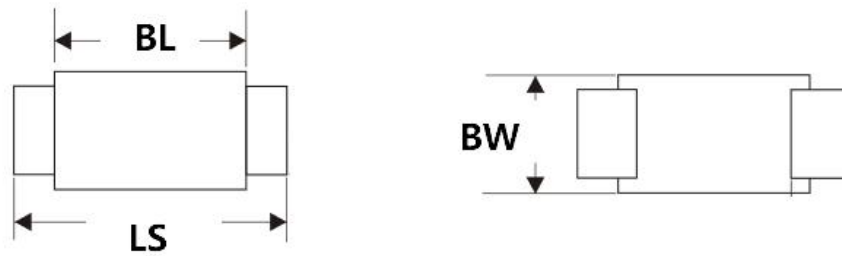
Diode:

Regular shape, regular arrangement of pins, There is a clear package type:

[PKT]\_L[BL]-W[BW]-(P[PP])-LS[LS]-(BI/FD/RD)

Regular shape, regular arrangement of pins, There is no clear package type:

DIO-SMD\_<sub>Q</sub>[Q]P-L[BL]-W[BW]-LS[LS]-(BI/FD/RD)



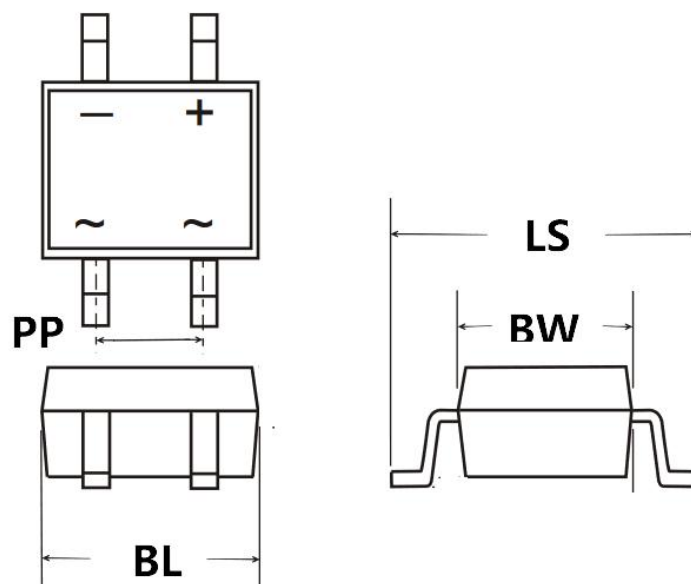
Non-Regular shape, regular arrangement of pins:

DIO-SMD\_<sub>SN</sub>[SN/MPN]

Rectifier bridge:

Regular shape, regular arrangement of pins, There is a clear package type:

[PKT]\_L[BL]-W[BW]-P[PP]-LS[LS]-TL/TR/BL/BR



Regular shape, regular arrangement of pins, There is no clear package type:

DIO-BG-SMD\_[Q]P-L[BL]-W[BW]-(P[PP])-LS[LS]-TL/TR/BL/BR\_-([SN/MPN])

Non-Regular shape, regular arrangement of pins 的:

DIO-BG-SMD\_[SN/MPN]

Light-Emitting Diode:

Regular shape, regular arrangement of pins:

LED-SMD\_[Q]P-L[BL]-W[BW]-(BI/FD/RD)-(EH)

Irregular shape, pins arranged irregularly:

LED-SMD\_[SN/MPN]

Discharge tube:

Regular shape, regular arrangement of pins:

DIO-DT-SMD\_L[BL]-W[BW]

Irregular shape, pins arranged irregularly:

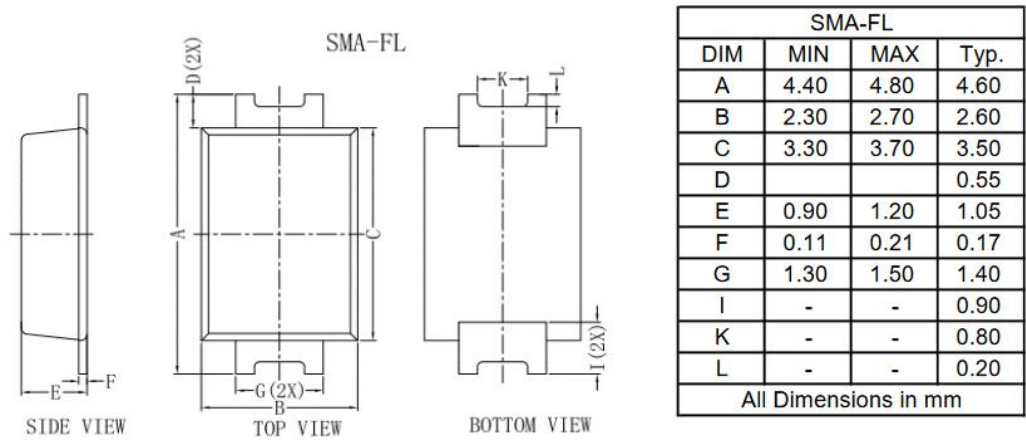
DIO-DT-SMD\_[SN/MPN]

Instructions:

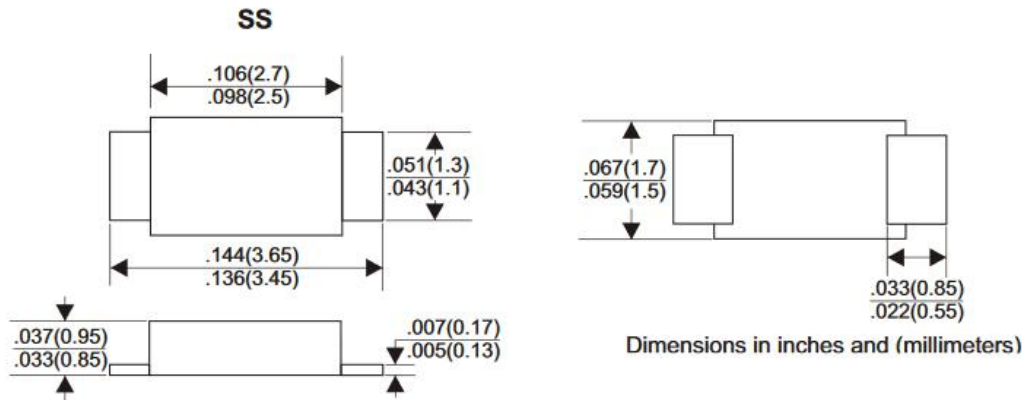
1. PKT: Package Type.
  - a. Diode package type. For example: SMA, SMB, SMC, SOD-123, SOD-323 etc.
  - b. Rectifier bridge package type. For example: ABS, DFS, DBS, MBF, MBS, MBLs etc.
2. DIO: Diode
3. LED: Light-Emitting Diode
4. BG: Bridge
5. DT: Discharge Tube
6. SMD: Surface mounted Device
7. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
8. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
9. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
10. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
11. L/R/TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is left/right/top left/top right/bottom left/bottom right of the origin
12. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left
13. EH: Extra Hole Positioning hole, through hole. In the same package name, there are difference when using positioning hole
14. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C383148) SMA-FL\_L3.5-W2.5-LS4.6-RD

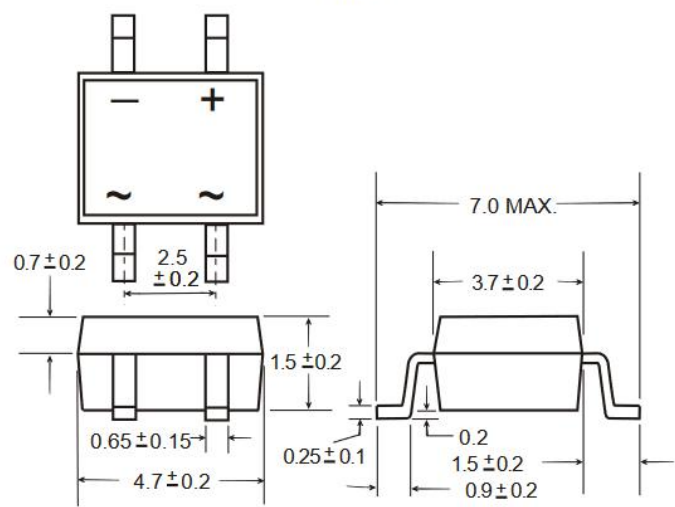


(C331748) DIO-SMD\_L2.6-W1.6-LS2.6-RD



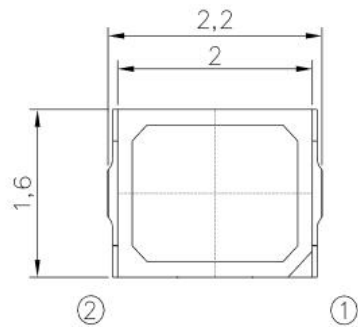
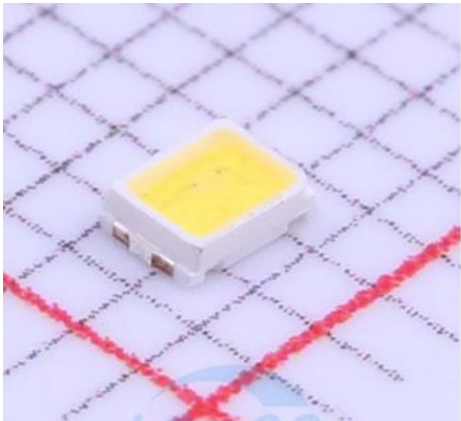
(C347348) MBF\_L4.7-W3.7-P2.50-LS7.0-BL

MBF

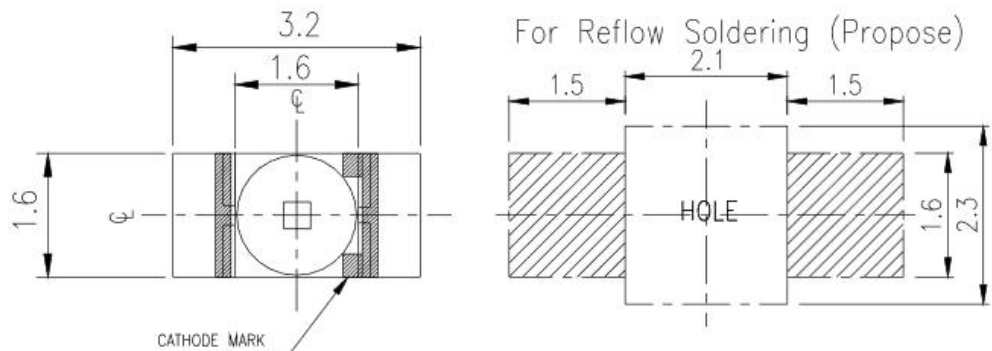


Dimensions in millimeters(1mm =0.0394")

(C282151) LED-SMD\_L2.2-W1.6-FD



(C61223) LED-SMD\_L3.2-W1.6-FD-EH

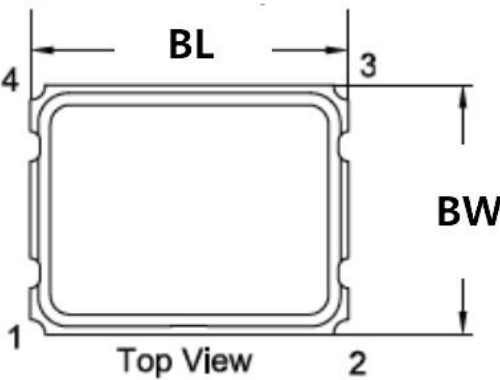


1.1.8 Non-standard Surface mounted Crystal oscillator

Crystal oscillator:

Regular shape, regular arrangement of pins:

OSC-SMD\_[Q]P-L[BL]-W[BW]-TL/TR/BL/BR



Non-Regular shape, regular arrangement of pins, There is a clear package type:

[PKT]\_L[BL]-W[BW]-(P[PP])-(TL/BL/TR/BR)



**HC-49S/SMD X'TAL 12.50×4.80×3.80**

**24.000000MHz**

**kHz 频率范围晶体单元**

**MC - 146 / MC - 156**

- 频率范围 : 32.768 kHz (32 kHz ~ 100 kHz)
- 外部尺寸规模 : 7.0 × 1.5 × 1.4 mm ---MC-146  
7.1 × 3.3 × 1.5 mm ---MC-156
- 谐波次数 : 基频
- 应用 : 小型便携式通信设备



Non-Regular shape, regular arrangement of pins, There is no clear package type:

OSC-SMD\_[SN/MPN]

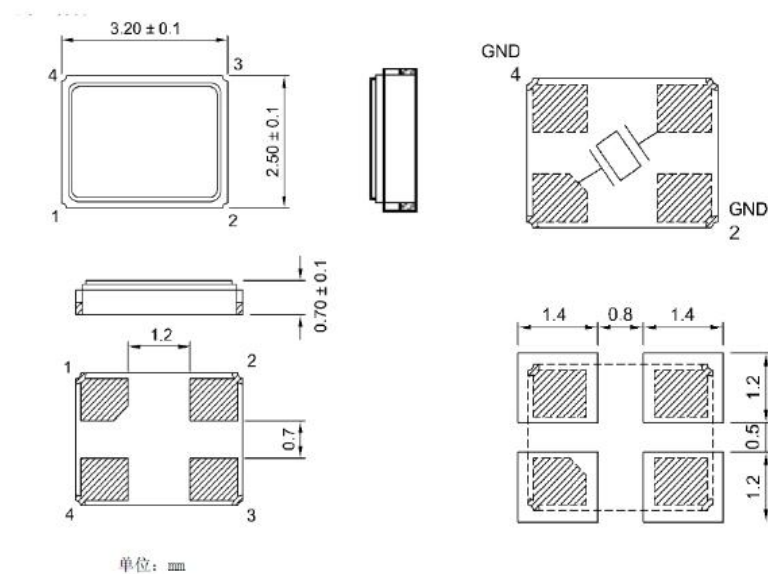


Instructions:

1. OSC: Oscillator
2. SMD: Surface mounted Device
3. PKT: Package Type. Crystal Package Type. For example: HC-49S, MC-146, MC-156 etc.
4. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
7. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
8. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

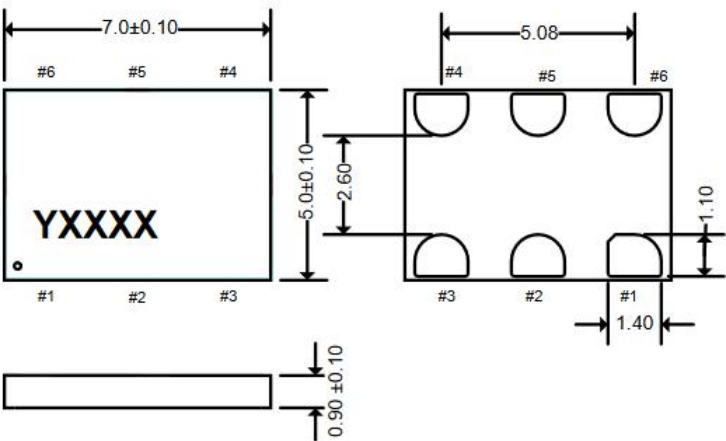
For example:

(C357882) OSC-SMD\_4P-L3.2-W2.5-BL

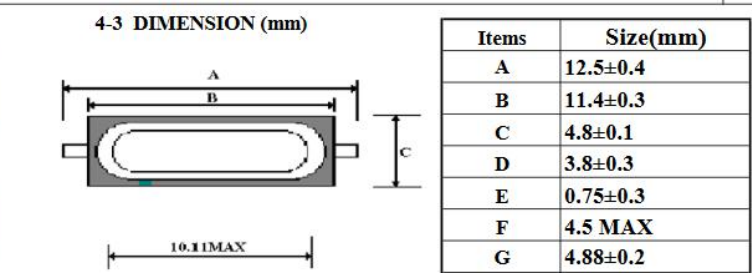


(C357882) OSC-SMD\_6P-L7.0-W5.0-BL

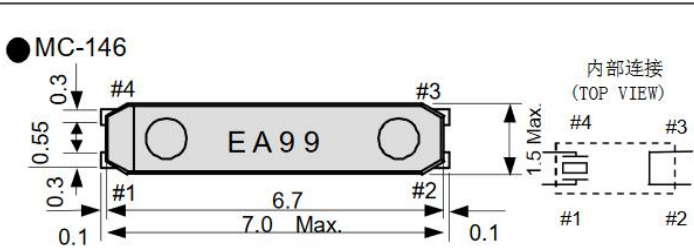
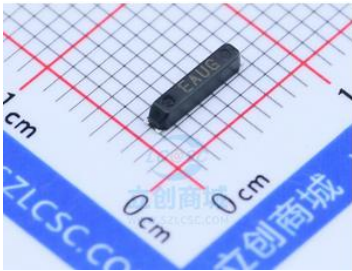
7.0 x 5.0x 0.90 mm



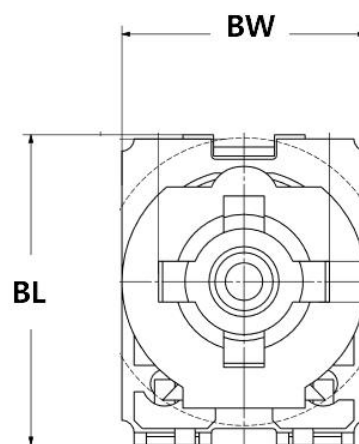
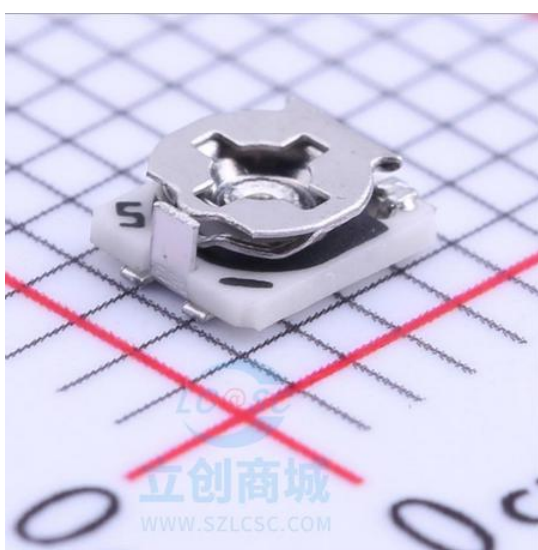
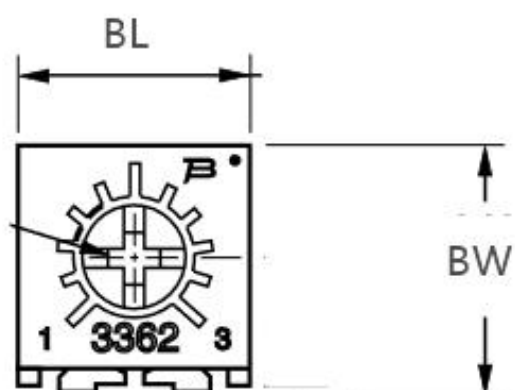
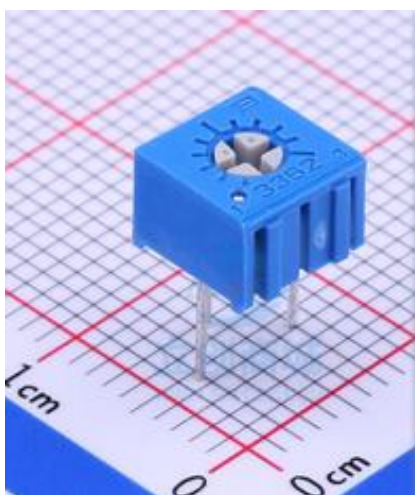
(C259050) HC-49S\_L11.4-W4.8



(C94977) MC-146\_4P-L6.7-W1.5-P0.85-BL



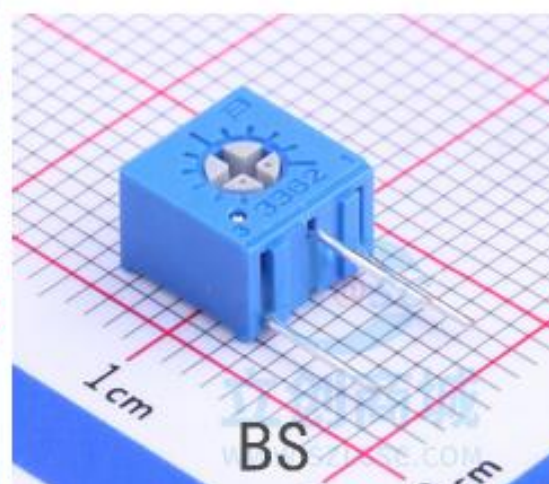
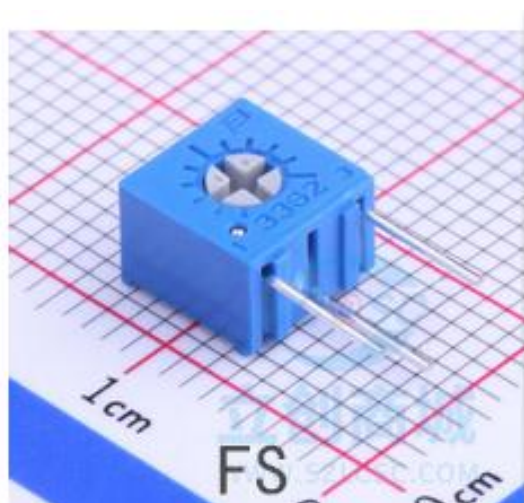
1.2 Variable resistor(Through Variable resistor, Surface mounted Variable resistor



Naming format:

Regular shape, regular arrangement of pins:

RES-ADJ-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]-TL/TR/BL/BR-(BS/FS)



FS: The pins are mostly in the front(In the front view, the pins are mostly in the front)

BS: The pins are in the back(In the front view, the pins are mostly in the back)

Irregular shape, pins arranged irregularly:

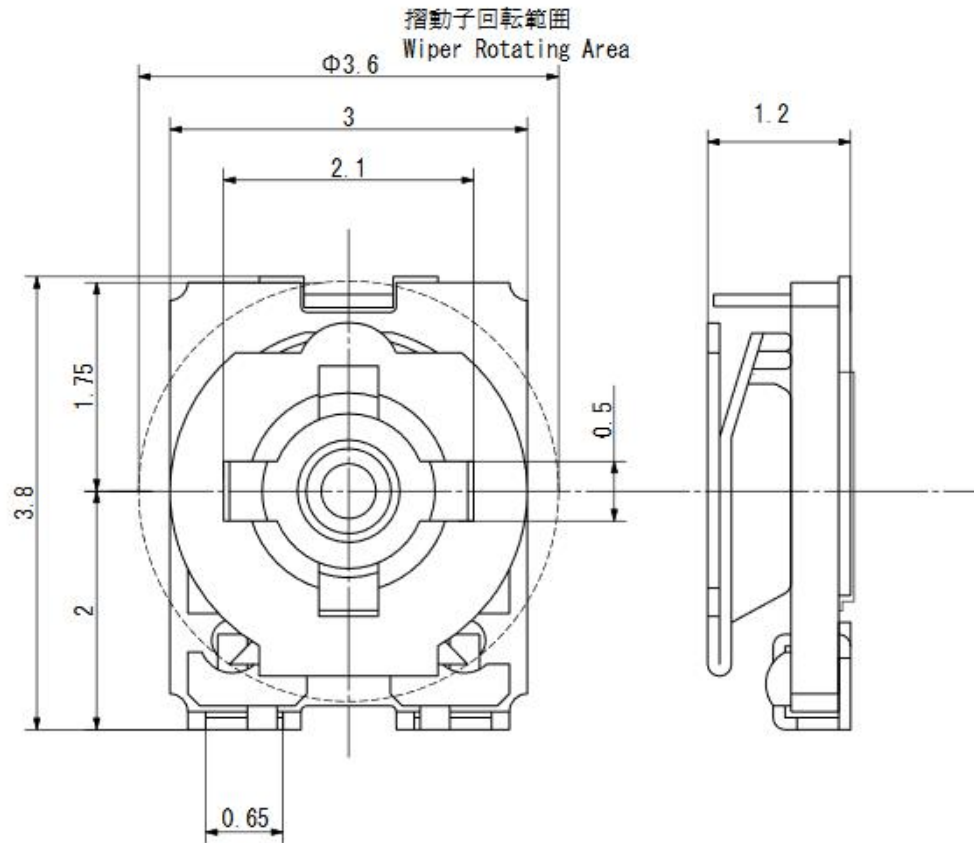
RES-ADJ-SMD/TH\_[SN/MPN]

Instructions:

1. RES: Resistor, Resistor
2. ADJ: Adjustment
3. SMD/TH: Surface mounted Device/Through Hole Device
4. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
5. V/H: Vertical/Horizontal, External interface of the device is perpendicular to the PCB/External interface of the device is parallel to the PCB
6. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
7. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
8. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
9. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
10. FS/BS: Front Side/Back Side, The pins are mostly in the front/The pins are in the back
11. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

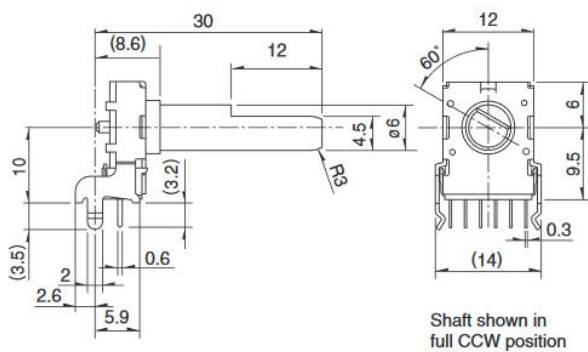
For example:

(C128545) RES-ADJ-SMD\_3P-L3.8-W3.0-P2.10-L



(C361174) RES-ADJ-TH\_RK12L12A

Horizontal type  
RK12L121( 音质用 )  
RK12L12A( 音量用 )



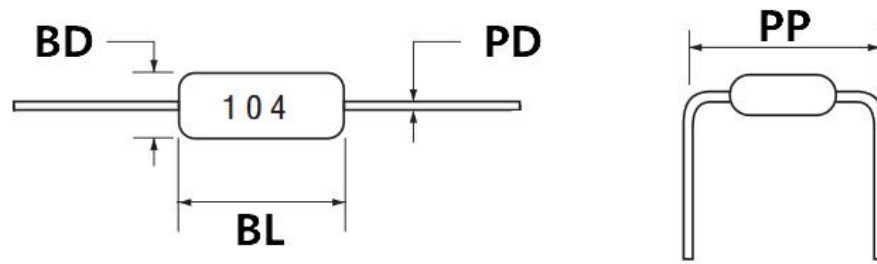
### 1.3 Axial Resistor, Through hole Capacitor, Through hole Inductor/Bead, Through hole Fuse, Through hole Diode, Through hole Crystal oscillator

The axial package has horizontal and vertical shaping. Considering the universality, only the horizontal shaping is discussed.

#### 1.3.1 Axial Resistor, Through hole Resistor Array, Flat Shape Through hole Resistor

Axial Resistor:

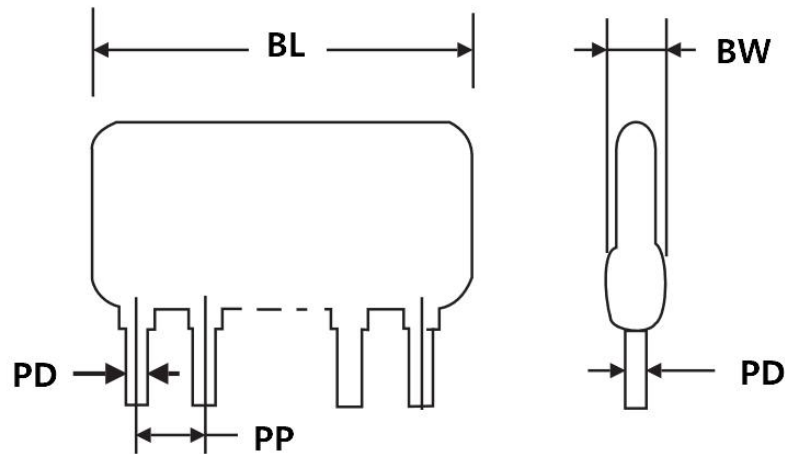
RES-TH\_BD[BD]-L[BL]-P[PP]-D[PD]



Axial Resistor

Through hole Resistor Array:

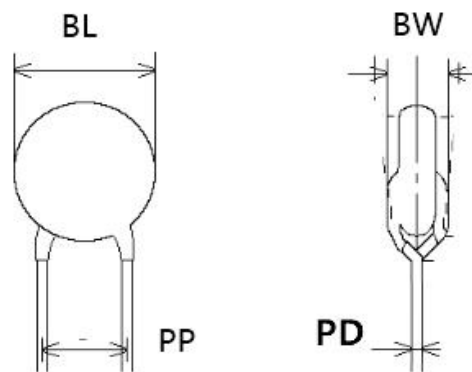
RES-ARRAY-TH\_[Q]P-P[PP]-D[PD]



Through hole Resistor Array

Flat Shape Through hole Resistor(Horizontal pins):

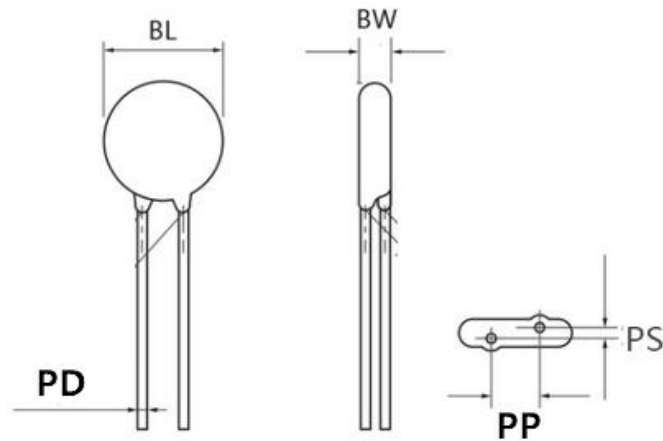
RES-TH\_L[BL]-W[BW]-P[PP]-D[PD]



### Through hole Flat shape Resistor(Horizontal pins)

Flat Shape Through hole Resistor(High and low pins):

RES-TH\_L[BL]-W[BW]-P[PP]-D[PD]-S[PS]



### Through hole Flat shape Resistor(High and low pins)

Other special package:

RES-TH\_[SN/MPN]

#### Instructions:

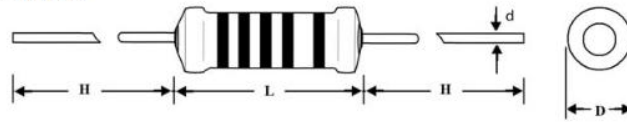
1. RES: Resistor, Resistor
2. ARRAY: Array, Array package
3. TH: Through, Through Hole Device
4. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken
5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
7. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
8. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

RES-TH\_BD1.7-L3.5-P7.50-D0.5



### 6. 尺寸 Dimension



Unit: mm

Type	Size	L±1	D±1	H±3	d±0.06	Resistance range	T.C.R	Tolerance
1/6W 1/8W 1/4WS 1/2WSS		3.5*	1.7*	27	0.45	0Ω~0.1Ω~10MΩ		

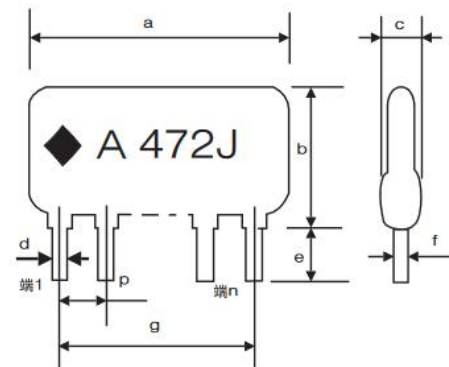
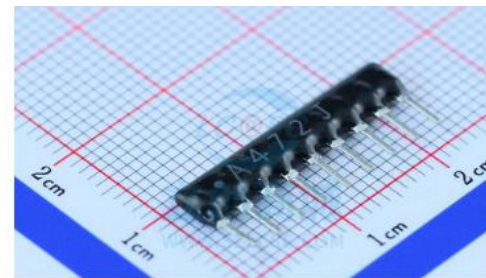
(C9112) RES-ARRAY-TH\_9P-P2.54-D0.5

### • 結構圖和外形尺寸

### CONSTRUCTION AND DIMENSIONS

單位 unit:mm

代號 Code	常規尺寸 Normal dimension		特殊尺寸 Special dimension	
a	$2.54 \times (n-1) + 2.50\text{max}$		$1.778 \times (n-1) + 3.20\text{max}$	
b	A、B、C、D、 E、F、G、H 型 Type	5.08max	A、B、C、D、 E、F、G、H 型 Type	5.08max
	T型 Type	8.50max	T型 Type	8.50max
c	3.00max		3.00max	
d	$0.50 \pm 0.1$		$0.50 \pm 0.1$	
e	$3.50 \pm 0.5$		$3.50 \pm 0.5$	
f	$0.25 \pm 0.1$		$0.30 \pm 0.1$	
g	$2.54 \times (n-1) \pm 0.3$		$1.778 \times (n-1) \pm 0.3$	
p	$2.54 \pm 0.1$		$1.778 \pm 0.1$	



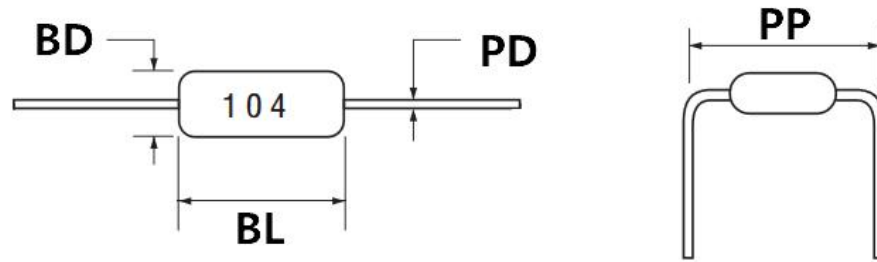
### 1.3.2 Axial Through hole Capacitor, cylindrical Through hole Capacitor, Flat Shape Through hole Capacitor

Naming format:

Axial Through hole Capacitor:

CAP-TH\_BD[BD]-L[BL]-P[PP]-D[PD]-(FD/RD)

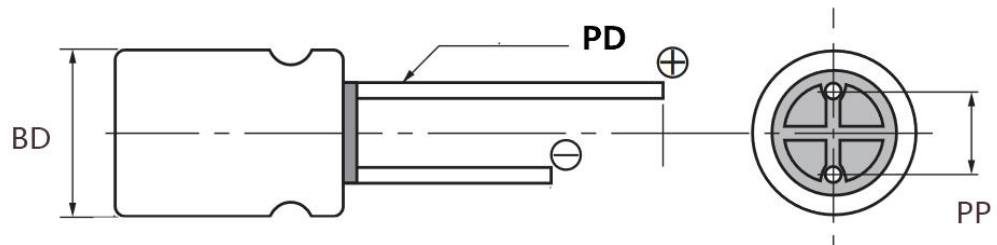




Axial Through hole Capacitor

cylindrical Through hole Capacitor:

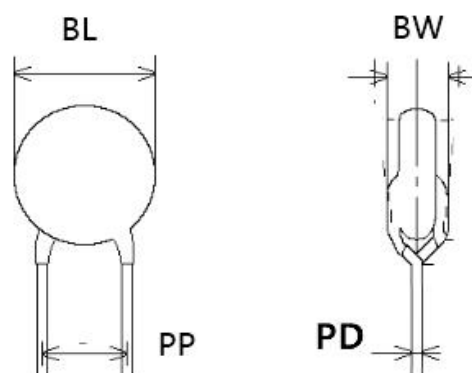
CAP-TH\_BD[BD]-P[PP]-D[PD]-(FD/RD)



Through hole cylindrical Capacitor

Flat Shape Through hole Capacitor(Horizontal pins):

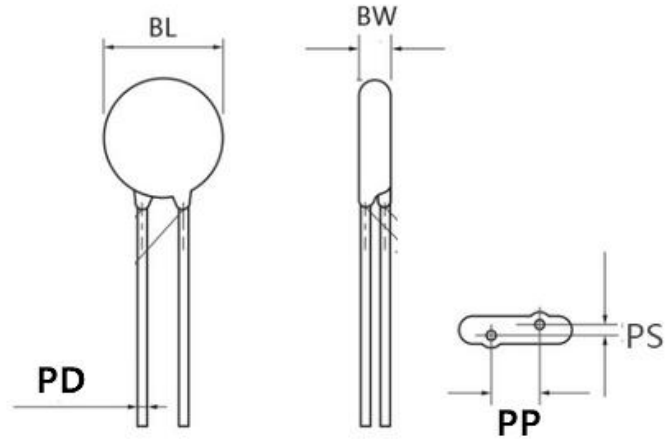
CAP-TH\_L[BL]-W[BW]-P[PP]-D[PD]-(FD/RD)



Through hole Flat shape Capacitor(Horizontal pins)

Flat Shape Through hole Capacitor(High and low pins):

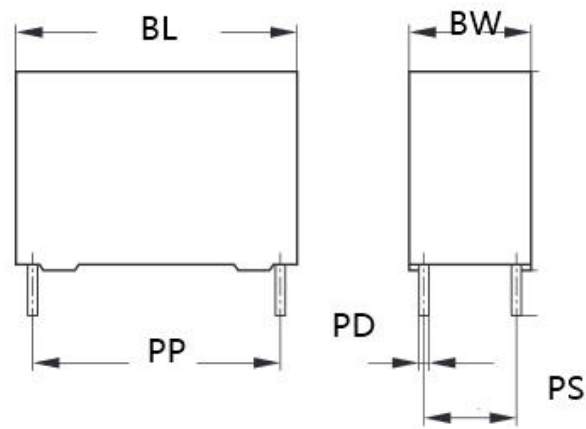
CAP-TH\_L[BL]-W[BW]-P[PP]-D[PD]-S[PS]-(FD/RD)



Through hole Flat shapeCapacitor(High and low pins)

Rectangular Through hole Capacitor:

CAP-TH\_([Q]P)-L[BL]-W[BW]-P[PP]-D[PD]-(S[PS])



Rectangular Through hole Capacitor

Other special package:

CAP-TH\_[SN/MPN]

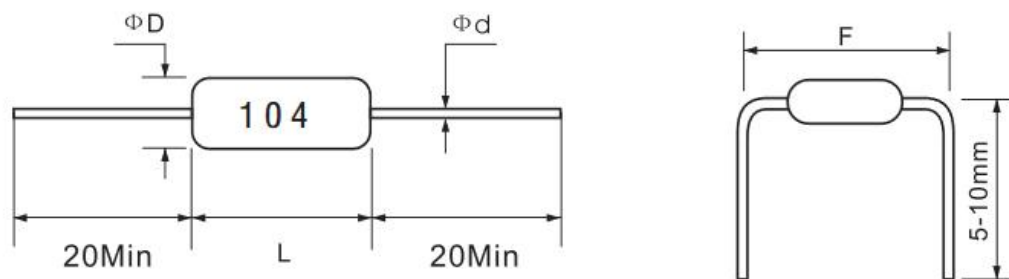
Instructions:

1. CAP: Capacitor, Capacitor
2. TH: Through, Through Hole Device
3. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken

5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
7. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
8. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
9. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time
10. FD/RD: Forward Direction/Reverse Direction, The polarity direction is from left to right/The polarity direction is from right to left
11. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

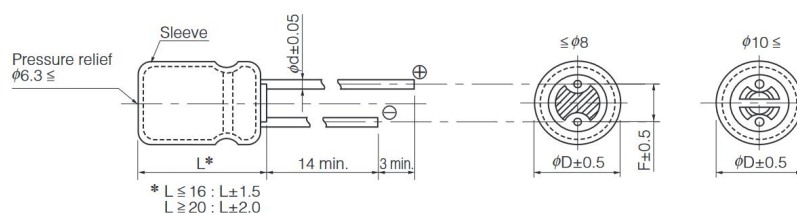
For example:

(C94928) CAP-TH\_BD2.2-L3.3-P7.50-D0.5



尺寸規格 Size Code	外形尺寸 (單位:mm) Dimensions (unit:mm)						工作電壓 Rated Voltage	標稱容量範圍 Available Capacitance	
	Lmax	Dmax	F ( 0.6)			d ( 0.05)		COG (NPO)	X7R
			F2	F3	F4				
13	3.3	2.2	5.08	7.5	10.0	0.42	25V 50V 100V 200/250V	0R3~102 0R3~102 0R3~102 0R3~102	101~154 101~104 101~473 101~683

CAP-TH\_BD5.0-P2.00-D0.5-FD



	5	6.3	8	10	12.5	16
ΦD	5	6.3	8	10	12.5	16
L	—	—	—	—	12.5 to 25	30 to 35
Φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5

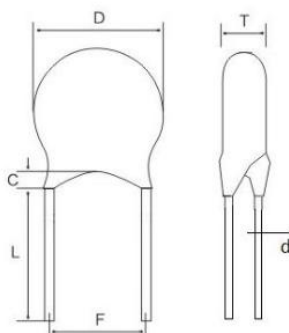
CAP-TH\_L7.5-W5.0-P5.00-D0.6

	尺寸	
直径(D)	7.50 mm Max.	
厚度(T)	5.00 mm Max.	
导线间距(F)	5.00 mm $\pm$ 1.50 mm	
导线直径(d)	0.60 mm $\pm$ 0.05 mm	

Dimensions in mm

CAP-TH\_L5.0-W2.5-P5.00-D0.4-S2.50

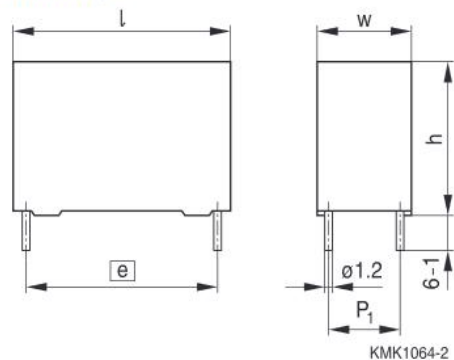
Dimension (mm)						
D $\pm$ 1.0	T $\pm$ 1.0	L $\pm$ 0.5	F $\pm$ 0.8	d $\pm$ 0.05	c Max	Packing
5.0	2.5	16.0	5.0	0.4	2.0	Bulk



(B32928C3206M000) CAP-TH\_4P-L57.5-W30.0-P52.50-D1.2-S20.3

Lead spacing mm	C <sub>R</sub> $\mu$ F	Max. dimensions w $\times$ h $\times$ l mm	Ordering code (composition see below)	Straight terminals, Ammo pack pcs./ MOQ	Straight terminals, Reel pcs./ MOQ	Straight terminals, Untaped pcs./ MOQ	Pins
52.5	20	30.0 $\times$ 45.0 $\times$ 57.5	B32928C3206+***	—	—	280	4

Drawing 2



Dimensions in mm

P<sub>1</sub> = 20.3 mm

Lead spacing e $\pm$ 0.4	Lead diameter d <sub>1</sub> $\pm$ 0.05	Type	Drawing
52.5	1.2	B32928	2

### 1.3.3 Rectangular Through hole Inductor, Axial Inductor, Cylindrical Inductor, Bead, Filter

Naming format:

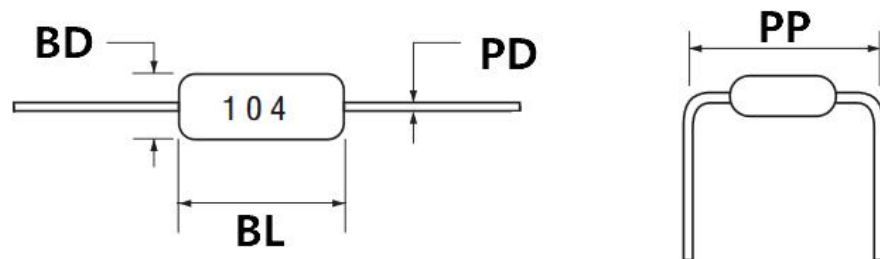
Rectangular Through hole Inductor(Top view):

IND/BEAD/FILTER-TH\_[Q]P-L[BL]-W[BW]-P[PP]-D[PD]-(S[PS])



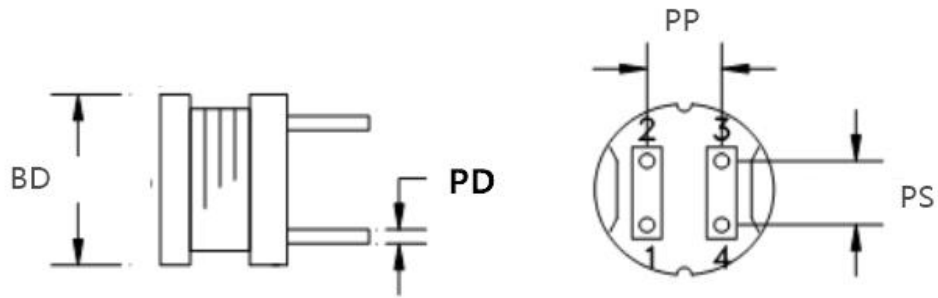
Axial Inductor:

IND/BEAD/FILTER-TH\_BD[BD]-L[BL]-P[PP]-D[PD]



Cylindrical Inductor:

IND/BEAD/FILTER-TH\_[Q]P-BD[BD]-P[PP]-D[PD]-(S[PS])



Other special package:

IND/BEAD/FILTER-TH\_[SN/MPN]

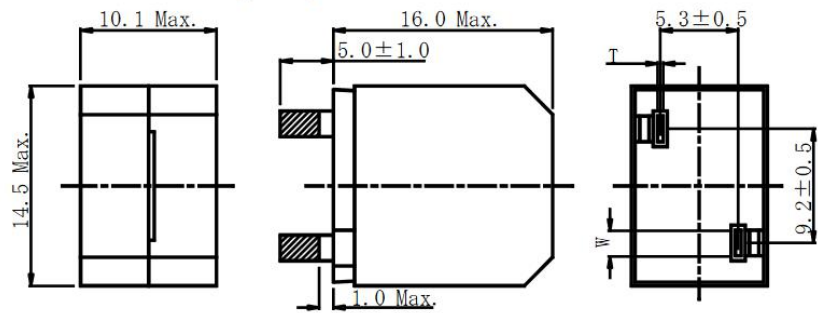
Instructions:

1. IND/BEAD/FILTER: Inductance/Bead/Filter, Inductor/Bead/Filter
2. TH: Through, Through Hole Device
3. [Q]P: Quantity Pin, The actual number of pins of the device, Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken
5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
7. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
8. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
9. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time
10. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

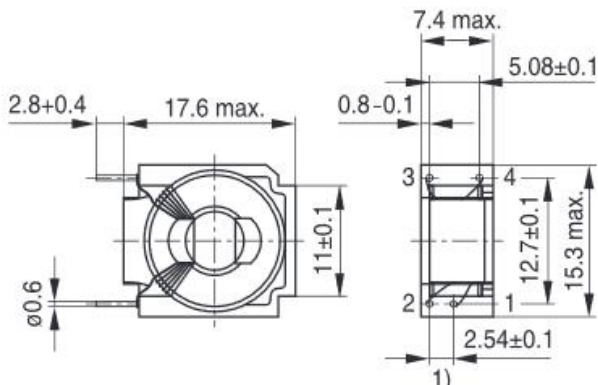
(C171617) IND-TH\_L10.1-W14.5-P5.30-D1.8-S9.20

Dimension - [mm]



No.	L (μH)	T (mm)	W (mm)
1	5.0	0.60ref.	1.75ref.

(C117734) IND-TH\_4P-L15.3-W7.4-P12.70-D0.6-S5.08



(C354658) IND-TH\_BD2.8-L4.8-P8.80-D0.5

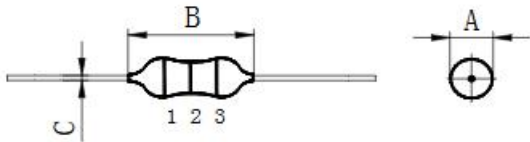
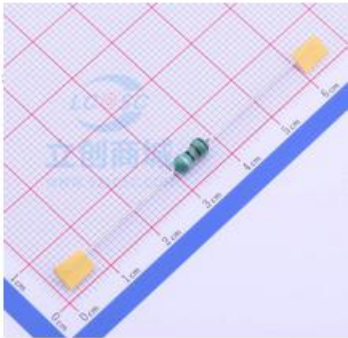
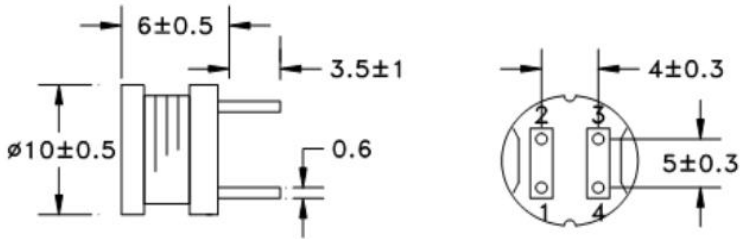


Figure 1

Type	Dimension(mm)			Figure
	A(Max)	B(Max)	C*(±0.1)	
CKL0204	Ø2.8	4.8	Ø0.45	1



(C179640) IND-TH\_4P-BD10.0-P5.00-D0.6-S4.00

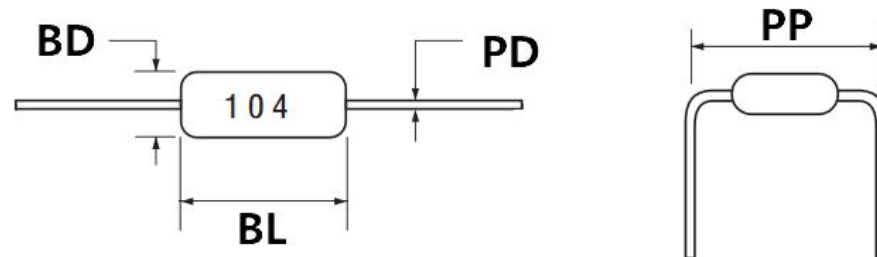


### 1.3.4 Axial Through hole Fuse, Flat Shape Through hole Fuse

Naming format:

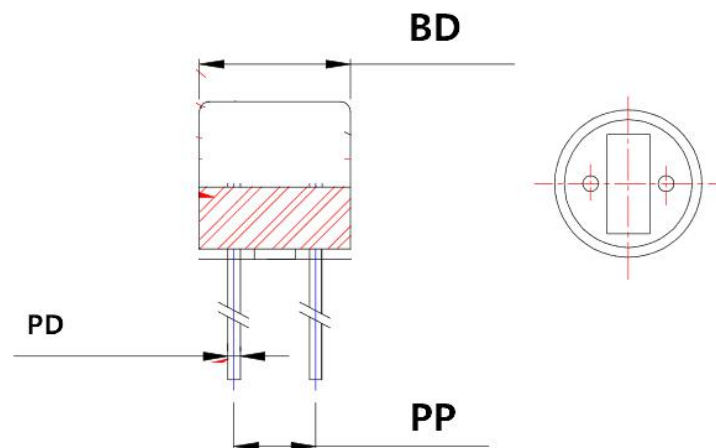
Axial Through hole Fuse:

FUSE-TH\_BD[BD]-L[BL]-P[PP]-D[PD]



cylindrical Through hole Fuse:

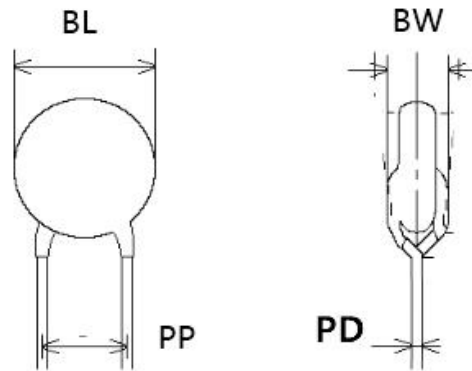
FUSE-TH\_BD[BD]-P[PP]-D[PD]



Flat Shape Through hole Fuse(Horizontal pins):

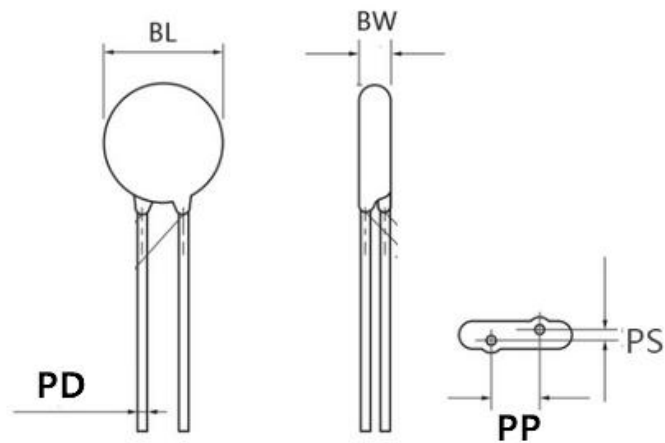
FUSE-TH\_L[BL]-W[BW]-P[PP]-D[PD]





Flat Shape Through hole Fuse(High and low pins):

FUSE-TH\_L[BL]-W[BW]-P[PP]-D[PD]-S[PS]



Other special package:

FUSE-TH\_[SN/MPN]

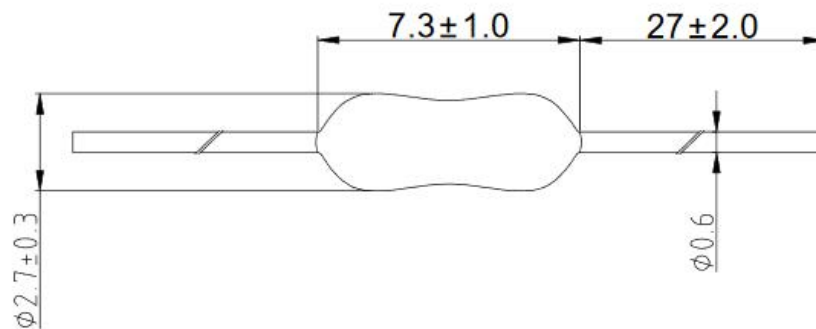
Instructions:

1. FUSE: Fuse, Fuse
2. TH: Through, Through Hole Device
3. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken
4. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
5. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
6. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
7. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default

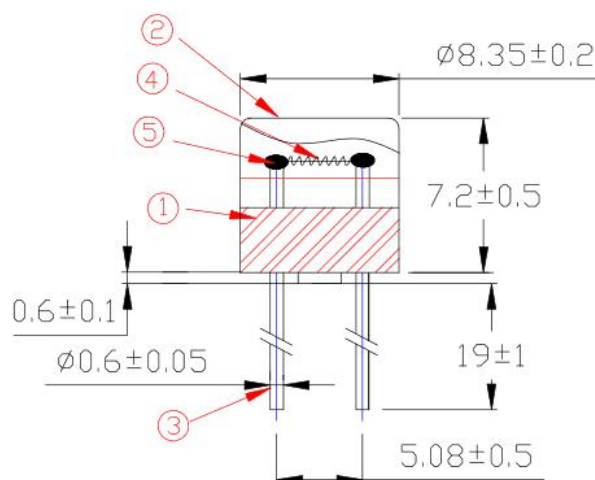
8. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C140540) FUSE-TH\_BD2.7-L7.3-P11.30-D0.6



(C140489) FUSE-TH\_BD8.4-P5.08-D0.6



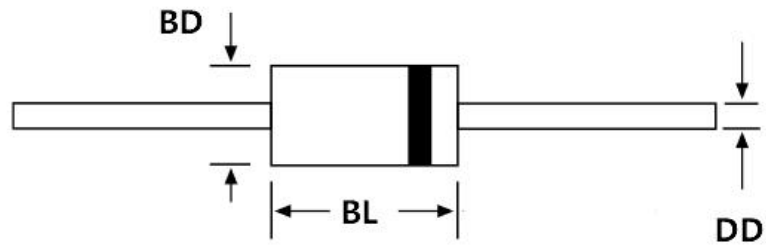
### 1.3.5 Axial Diode, Through hole Rectifier bridge, Through hole Light-Emitting Diode, Cylindrical Light-Emitting Diode, Discharge tube

Naming format:

Axial Diode:

There is a clear package type:

[PKT]\_BD[BD]-L[BL]-P[PP]-D[PD]-(BI/FD/RD)



There is no clear package type:

DIO-TH\_BD[BD]-L[BL]-P[PP]-D[PD]-(BI/FD/RD)

Other irregularities Through hole Diode:

DIO-TH\_[SN/MPN]

Rectifier bridge:

There is a clear package type:

[PKT]\_[Q]P-L[BL]-W[BW]-(P[PP])-(TL/BL/TR/BR)

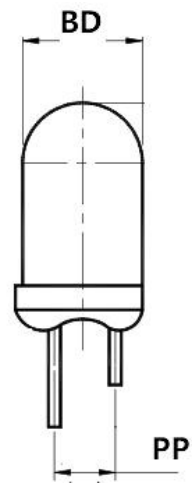
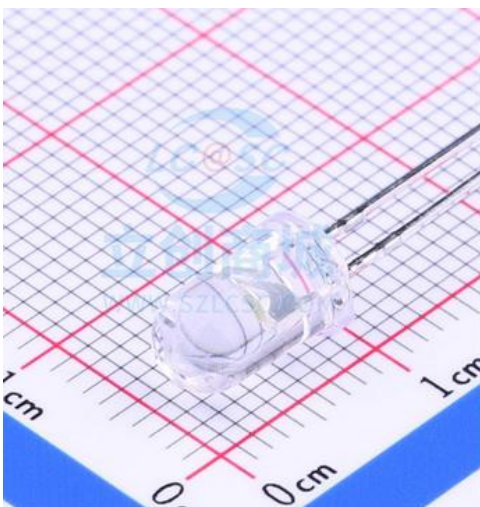
There is no clear package type:

DIO-BG-TH\_[SN/MPN]

Light-Emitting Diode:

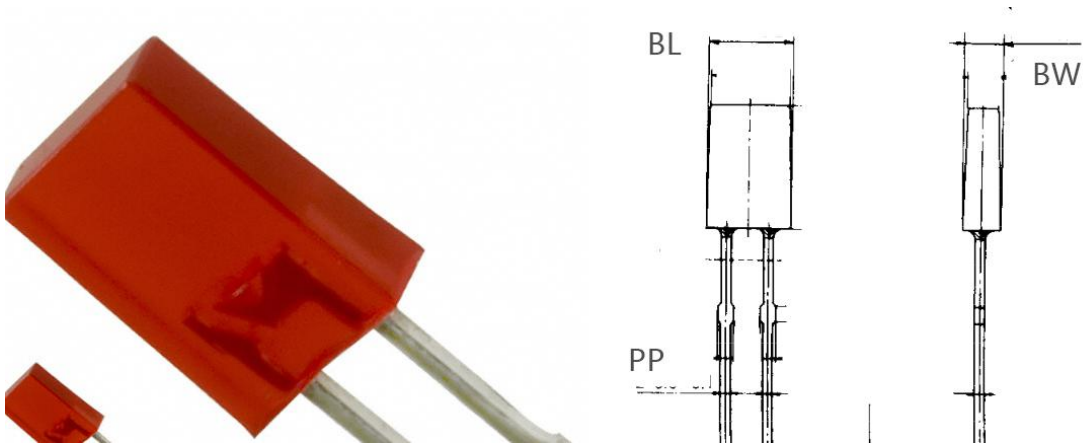
Through hole Cylindrical LED:

LED-TH\_[Q]P-BD[BD]-P[PP]-TL/TR/BL/BR-(BI/FD/RD)



Through hole Rectangular LED:

LED-TH\_[Q]P-L[BL]-W[BW]-P[PP]-TL/TR/BL/BR-(BI/FD/RD)



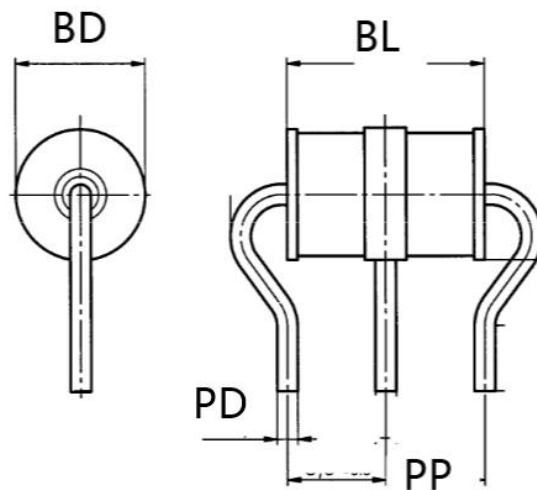
Other Shape Through hole LED:

LED-TH\_[SN/MPN]

Discharge tube:

Axial Through hole Discharge tube:

DIO-DT-TH\_[Q]P-BD[BD]-L[BL]-P[PP]-D[PD]



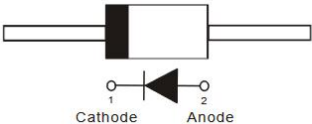
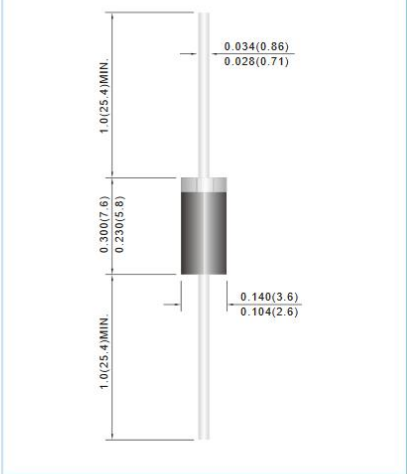
Instructions:

1. LED: Light-Emitting Diode, Light-Emitting Diode
2. DIO: Diode, Diode
3. BG: Bridge
4. DT: Discharge Tube, Discharge tube
5. PKT: Package Type.

- a. Axial Diode package type. For example: LL-34, DO-24, DO-35, DO-41, DO-21, DO-15, DO-204, DO-201, DO-213, DO-214 etc.
  - b. Rectifier bridge package type. For example: 2GBJ, 6KBJ, DF-M etc.
6. SMD: Surface mounted Device
  7. [Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
  8. S: Standard, Standard resistance capacitance size, For example:0402, 0603, 0805
  9. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
  10. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken
  11. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
  12. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
  13. L/R/TL/TR/BL/BR: Left/Right/Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is left/right/top left/top right/bottom left/bottom right of the origin
  14. BI/FD/RD: BI-Directional/Forward Direction/Reverse Direction, Bidirectional polarity/The polarity direction is from left to right/The polarity direction is from right to left
  15. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C138350) DO-15\_BD3.1-L6.7-P10.70-D0.9-RD

VOLTAGE	50 to 1000 Volt	CURRENT	2 Ampere	DO-15	Unit : inch(mm)
<b>FEATURES</b> <ul style="list-style-type: none"> <li>Plastic package has Underwriters Laboratory Flammability Classification 94V-O utilizing Flame Retardant Epoxy Molding Compound</li> <li>Exceeds environmental standards of MIL-S-19500/228.</li> <li>Ultra Fast switching for high efficiency.</li> <li>Lead free in compliance with EU RoHS 2011/65/EU directive</li> </ul>					
<b>MECHANICAL DATA</b> <ul style="list-style-type: none"> <li>Case: Molded plastic, DO-15</li> <li>Terminals: Axial leads, solderable per MIL-STD-750, Method 2026</li> <li>Polarity: Color band denotes cathode end</li> <li>Weight: 0.014 ounce, 0.397 gram</li> </ul>					
					

(C374049) DIO-TH\_BD8.9-L8.9-P12.90-D1.4-FD

## Dimensions

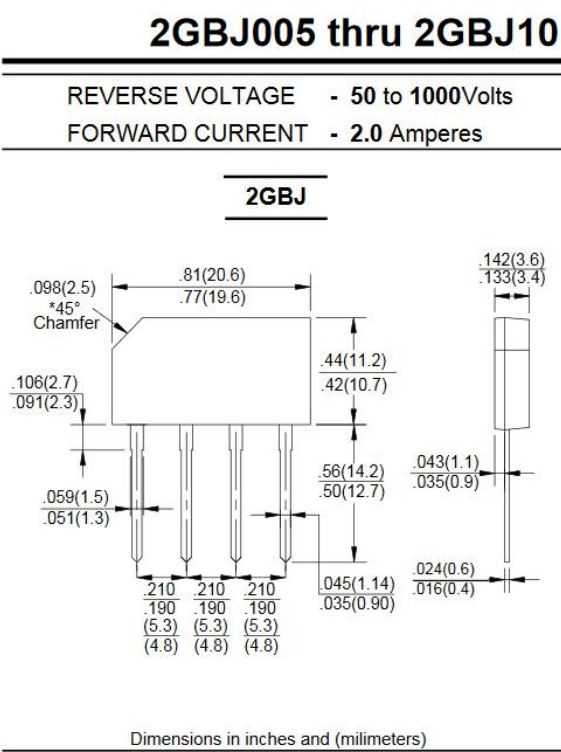
Technical drawing of a P600 component. The drawing shows a central rectangular body with a vertical black line on its right side labeled "Cathode Band (for Uni-directional products only)". Dimension A is the length of the main body. Dimension B is the width of the central body. Dimension C is the thickness of the component. Dimension D is the height of the central body. The label "P600" is centered below the drawing.

## Part Numbering System

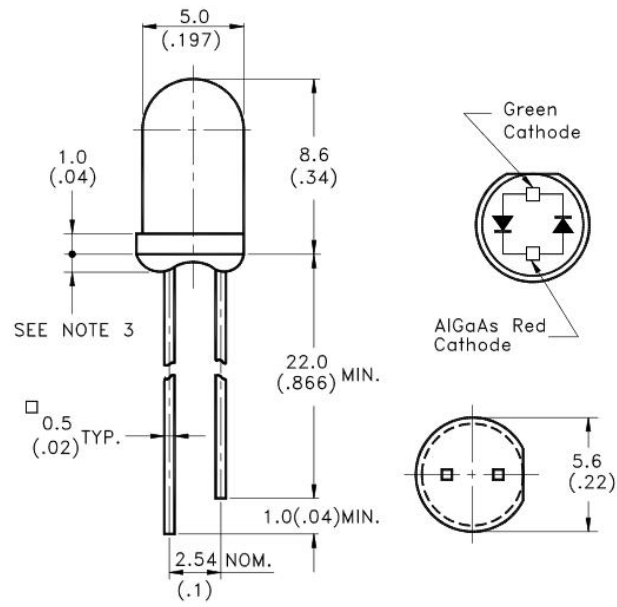
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	1.000	-	25.40	-
B	0.340	0.360	8.60	9.10
C	0.048	0.054	1.22	1.36
D	0.340	0.360	8.60	9.10

## Part Marking System

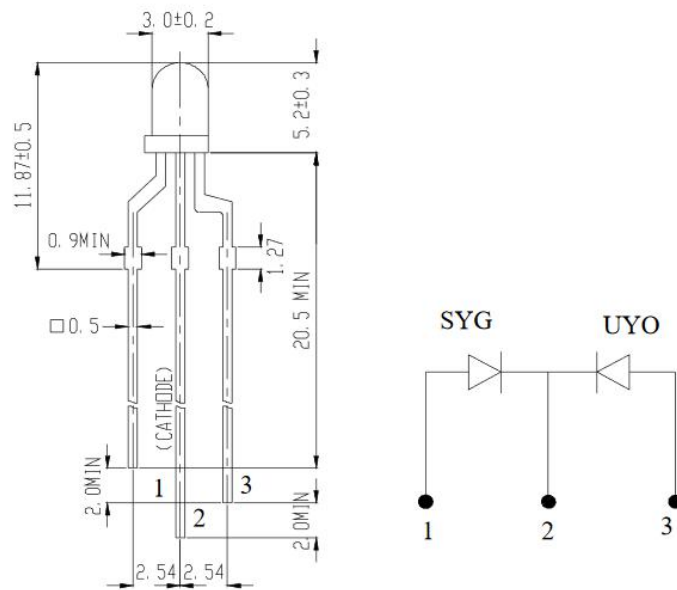
(C89929) 2GBJ\_4P-L20.2-W3.5-P5.10



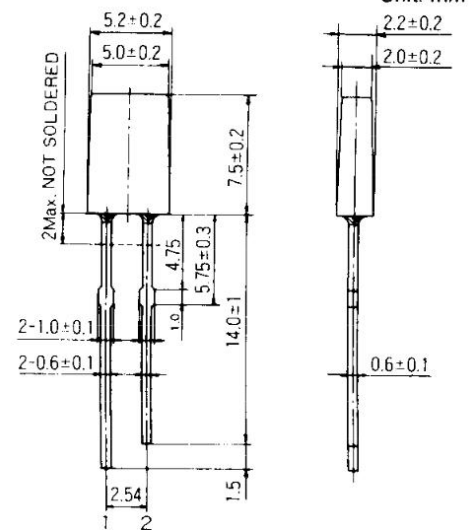
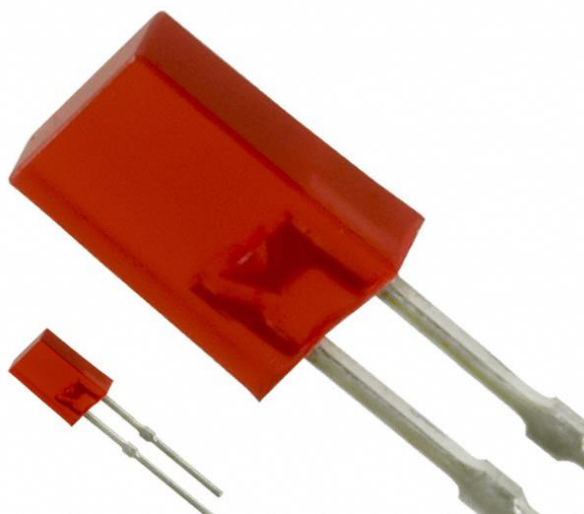
(C125079) LED-TH\_BD5.0-P2.54-BI



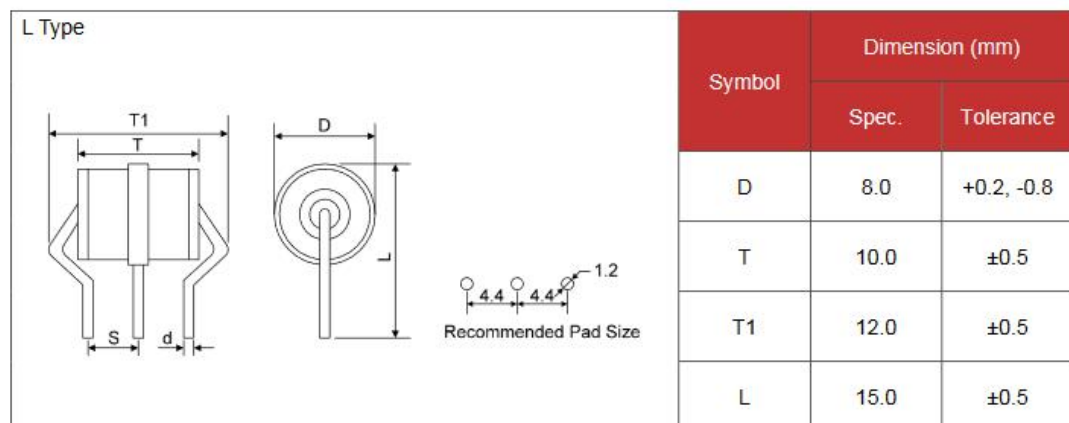
(C282141) LED-TH\_3P-BD3.0-P2.54-BI



(LN842RP) LED-TH\_L5.2-W2.2-P2.54-FD



(C111089) DIO-DT-TH\_3P-BD8.0-L10.0-P4.40



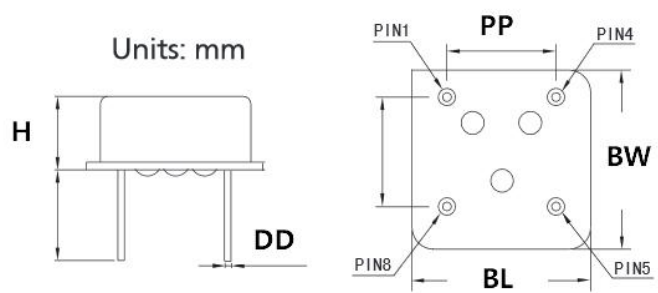
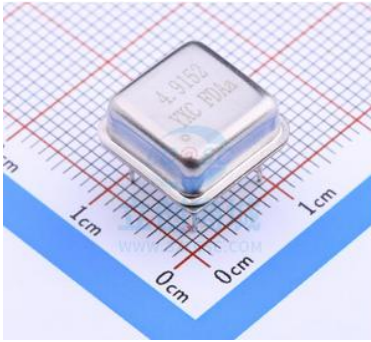
### 1.3.6 Through hole Regular , Cylindrical , Long Cylindrical Through hole Oscillator

Naming format:

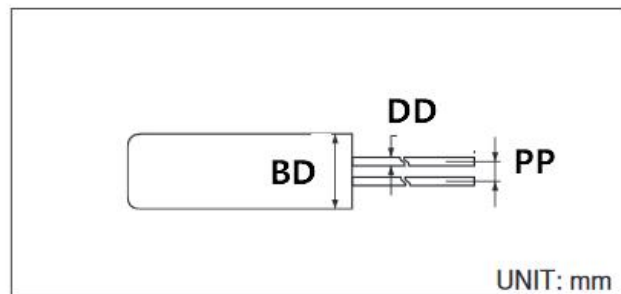
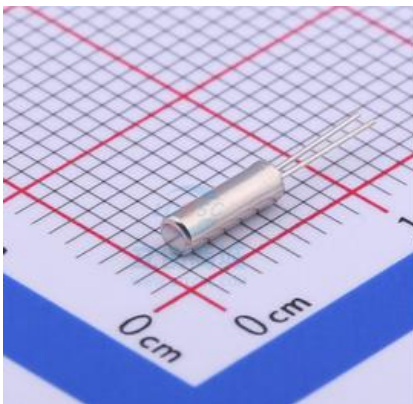
Regular shape, regular arrangement of pinsThrough hole :

OSC-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]-TL/TR/BL/BR





Cylindrical Through hole :  
OSC-TH\_BD[BD]-P[PP]



Long Cylindrical Crystal:  
There is a clear package type:  
[PKT]\_L[BL]-W[BW]-P[PP]

## HC-49US



### Features

- External dimensions: 11.5 x 4.5 x 3.68mm.
- Frequency range: 3.579545MHz ~ 64MHz.
- Surface mount type crystal units.
- A great number of standard frequencies.
- High frequency pullability and low equivalent s
- Highly mass production capability.

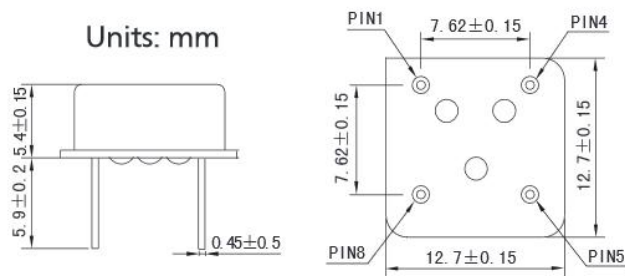
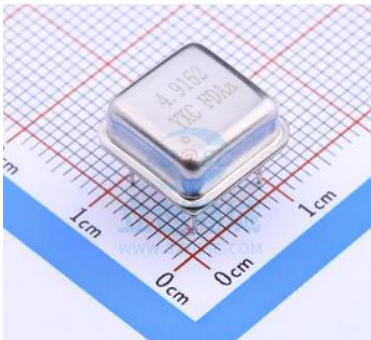
There is no clear package type:  
OSC-TH\_[SN/MPN]

Instructions:

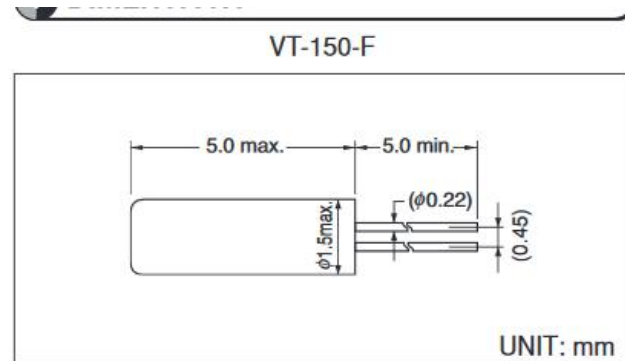
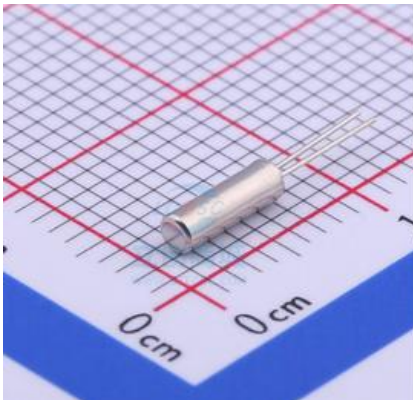
1. OSC: Oscillator
2. TH: Through, Through Hole Device
3. PKT: Package Type. For example: HC-49US etc.
4. [Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
5. D[PD]: Pin Diameter. when two decimal places are marked, the maximum value is taken and one decimal place is carried out. For example: 1.42mm is marked, 1.5mm is taken
6. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
7. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
8. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
9. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
10. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
11. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

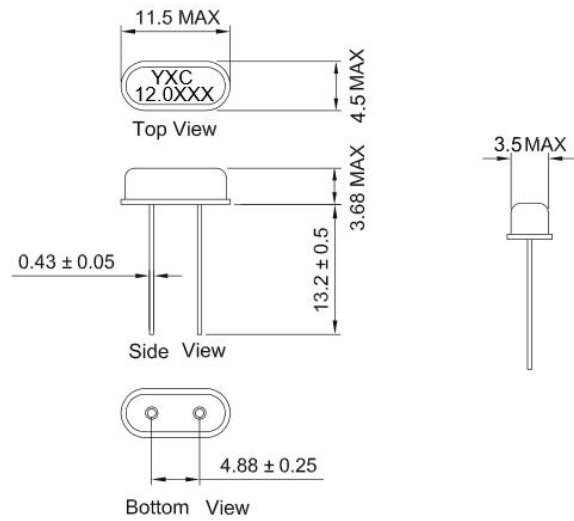
(C58318) OSC-TH\_4P-L12.7-W12.7-P7.62-BL



(C398715) OSC-TH\_BD1.5-P0.45

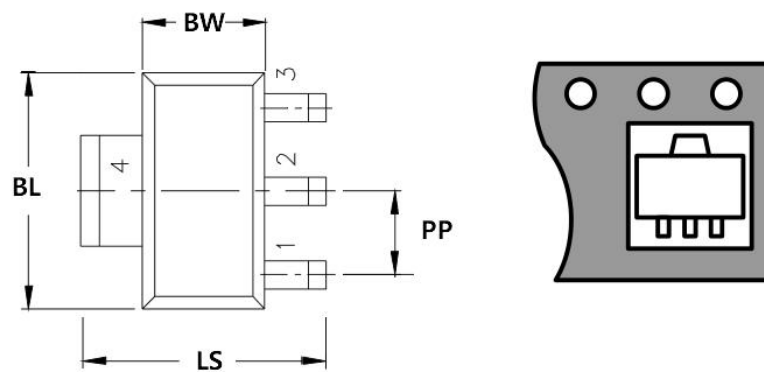


(C21263) HC-49US\_L11.5-W4.5-P4.88



## 2. Regular Package Shape Semiconductor

### 2.1 Small Outline Transistor



Regular shape, regular arrangement of pins naming format:

[PKT]-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(L/R/TL/BL/TR/BR)

Non-Regular shape, regular arrangement of pins naming format:

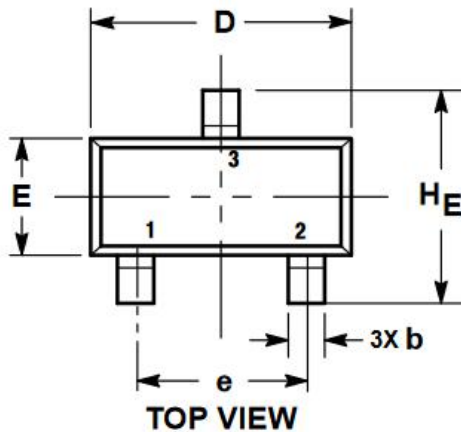
[PKT]-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(L/R/TL/BL/TR/BR)-(CW)\_([SN/MPN])

Instructions:

1. PKT: Package Type. For example: SOT-143, SOT-343, SOT-23, SOT-223, SOT-323, SOT-89, SOT-236 etc.
2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink. For example: SOT-23-3, SOT-23-5, SOT-23-6, SOT-89-3 etc.
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
7. L/R/TL/BL/TR/BR: Left/Right/Top Left/Bottom Left/Top Right/Bottom Right, The first pin of the package is left/right/left upper/lower/right upper/lower right of the origin
8. CW: Clockwise, Indicates that when the origin is the center, the footprint pads are numbered counterclockwise by default. This parameter is used only when the pads numbered clockwise
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

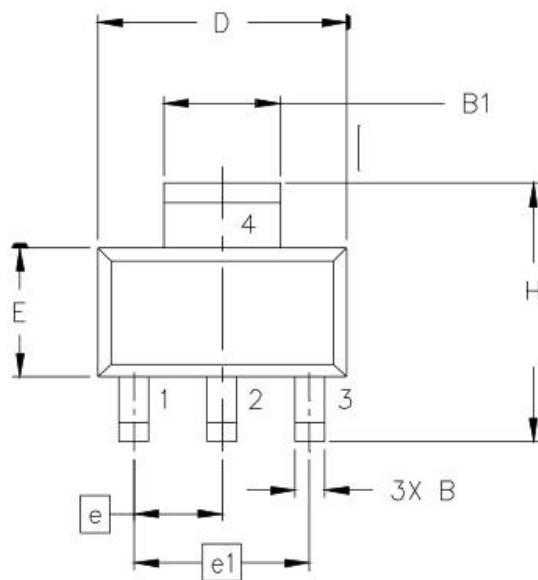
For example:

(C266793) SOT-23-3\_L2.9-W1.3-P1.90-LS2.4-BR



DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.89	1.00	1.11
A1	0.01	0.06	0.10
b	0.37	0.44	0.50
c	0.08	0.14	0.20
D	2.80	2.90	3.04
E	1.20	1.30	1.40
e	1.78	1.90	2.04
L	0.30	0.43	0.55
L1	0.35	0.54	0.69
HE	2.10	2.40	2.64
T	0°	---	10°

(C151552) SOT-223-4\_L6.5-W3.5-P2.30-LS7.0-BR



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.55	1.80	.061	.071
B	0.65	0.85	.026	.033
B1	2.95	3.15	.116	.124
C	0.25	0.35	.010	.014
D	6.30	6.70	.248	.264
E	3.30	3.70	.130	.146
e	2.30	BSC	.0905	BSC
e1	4.60	BSC	.181	BSC
H	6.71	7.29	.264	.287
L	0.91	—	.036	—
L1	0.061	BSC	.0024	BSC
θ	—	10°	—	10°

(C380928) SOT-89-3\_L4.5-W2.5-P1.50-LS4.2-BR\_BCX (Pin order is 132, Not common 123)

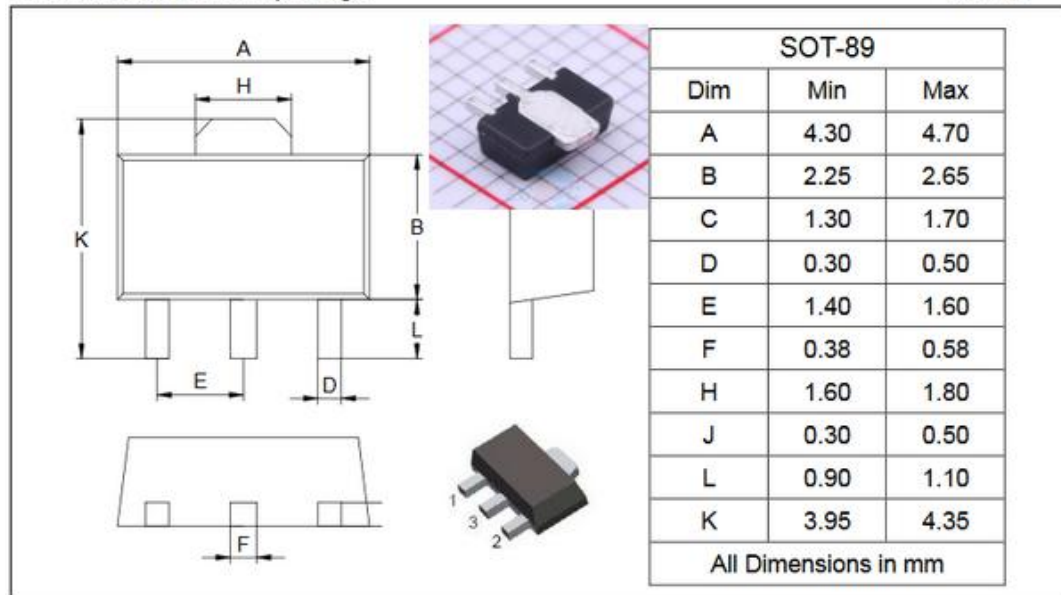
## NPN Silicon AF Transistors

## BCX54/BCX55/BCX56

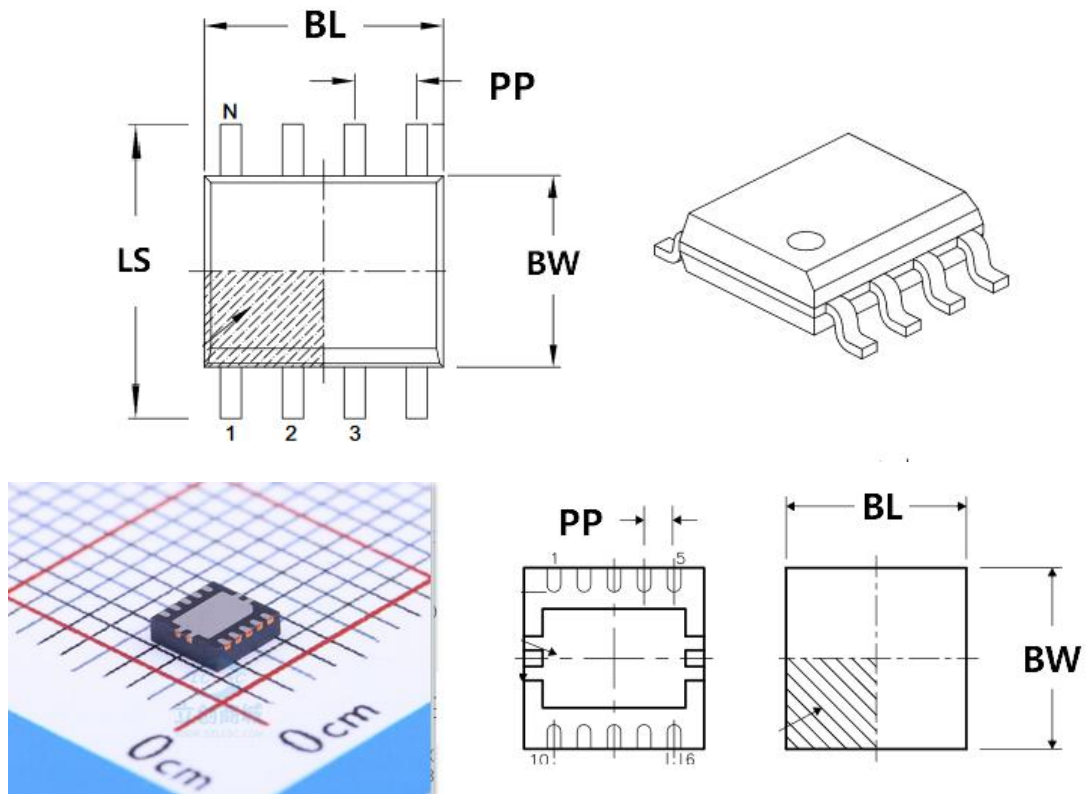
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



## 2.2 Small Outline Package



Regular shape, regular arrangement of pins naming format:

[PKT]-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)-(EP)

Non-Regular shape, regular arrangement of pins naming format:

[PKT]-[Q1]\_[Q2]P-L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)-(PE[X])-(EP)\_([SN/MPN])

Instructions:

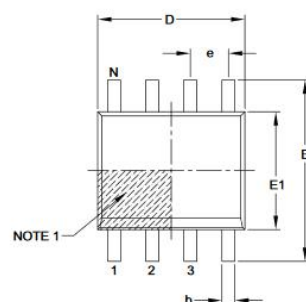
1. Package Type. For example:
  - a. SOP, Small Outline Package
  - b. TSOP, Thin Small Outline Package
  - c. MSOP, Micro Small Outline Package
  - d. HSOP, Heat Sink Small Outline Package
  - e. TSSOP, Thin Shrink Small Outline Package
  - f. HTSSOP, Heat-Sink Thin Shrink Small Outline Package
  - g. SSOP, Shrink Small Outline Package
  - h. VSOP, Very Small Outline Package
  - i. SOIC, Small Outline Intergrated Circuit
  - j. SOJ, Small Outline IC J-Leaded
  - k. SON, Small Outline No-lead
  - l. SO, Small Outline



2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
3. Q1: Represents the number of signal pins that the package should have(The number of pins of the device which contains remain pin(s))), In the absence of pin, use with Q2
4. [Q2]P: Pin, Q2 The actual number of pins of the device, Use when pin(s) are missing. Q1 is not necessarily the same as Q2. Q1 is the same as Q2, so the plug-in class doesn't have to write Q1, and the semiconductor class doesn't have to write Q2. Generally, Q1 without pin(s) is greater than Q2
5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
7. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
8. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
9. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
10. PE[X]: Pin Empty, Indicates that the device pin X is empty. This parameter is not used when X is greater than 1
11. EP: Expose Pad/Extra Pad, For example:bottom heat sink pad. EP2.5 refers to the thermal pad of 2.5mm in length and width, and the size is only used in the same package with different EP sizes; If not square pad, default size is not written
12. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

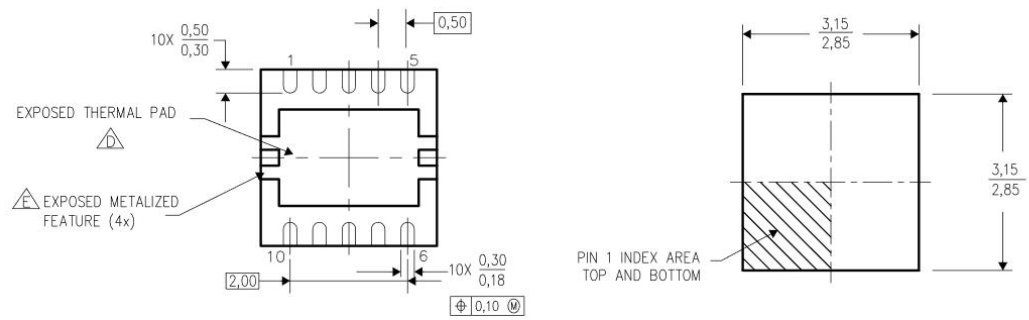
For example:

(C5453) SOIC-8\_L4.9-W3.9-P1.27-LS6.0-BL



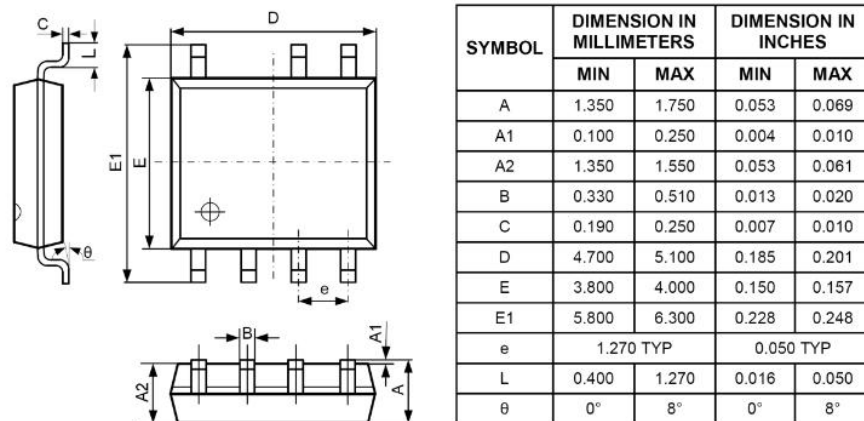
Units		MILLIMETERS		
Dimension Limits		MIN	NOM	MAX
Number of Pins	N	8		
Pitch	e	1.27 BSC		
Overall Height	A	—	—	1.75
Molded Package Thickness	A2	1.25	—	—
Standoff §	A1	0.10	—	0.25
Overall Width	E	6.00 BSC		
Molded Package Width	E1	3.90 BSC		
Overall Length	D	4.90 BSC		
Chamfer (optional)	h	0.25	—	0.50
Foot Length	L	0.40	—	1.27
Footprint	L1	1.04 REF		

(C11347) SON-10\_L3.0-W3.0-P0.50-BL-EP (The pins are not outside the package body, no LS is required)

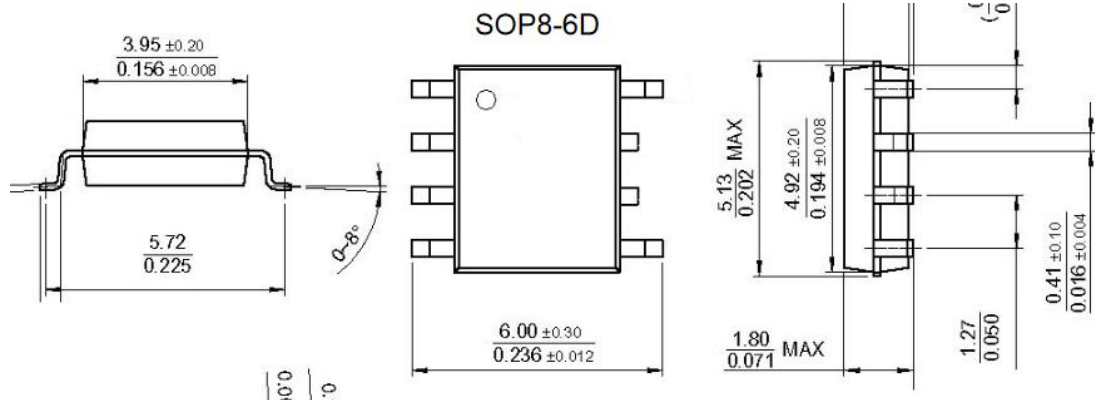


(C216676) SOP-8\_7P-L4.9-W3.9-P1.27-LS6.1-BL-PE7

#### SOP-7 PACKAGE OUTLINE AND DIMENSIONS

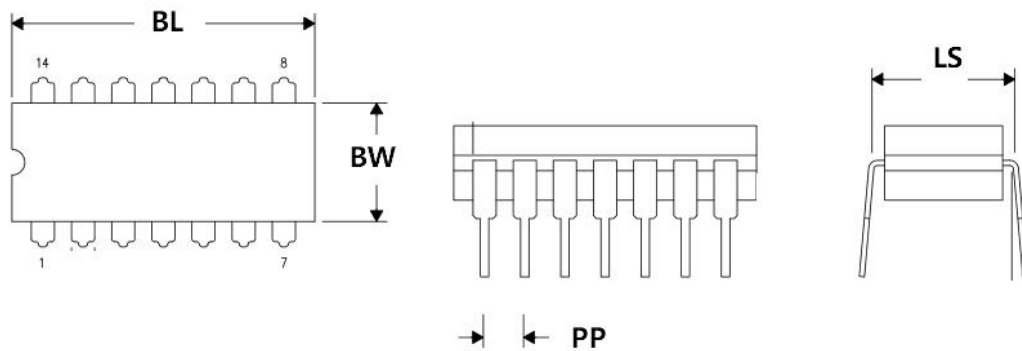


(C236986) SOP-8\_6P-L5.1-W4.0-P1.27-LS6.0\_THX208



## 2.3 Dual-In-Line Package





Regular shape, regular arrangement of pins naming format:

DIP-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)

Non-Regular shape, regular arrangement of pins naming format:

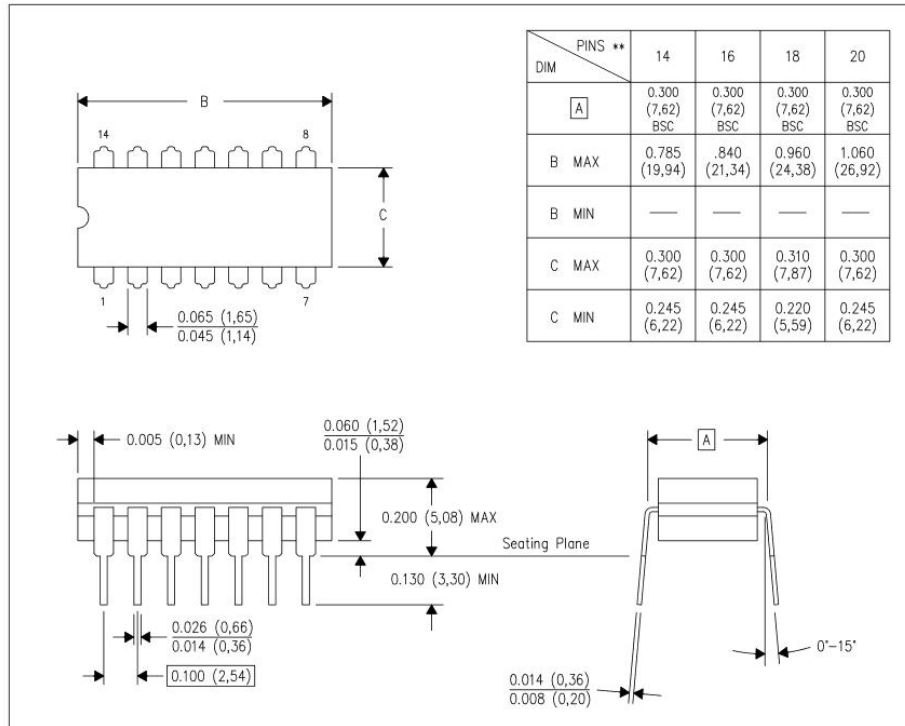
DIP-[Q1]\_[Q2]P-L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)-(PE[X])\_([SN/MPN])

Instructions:

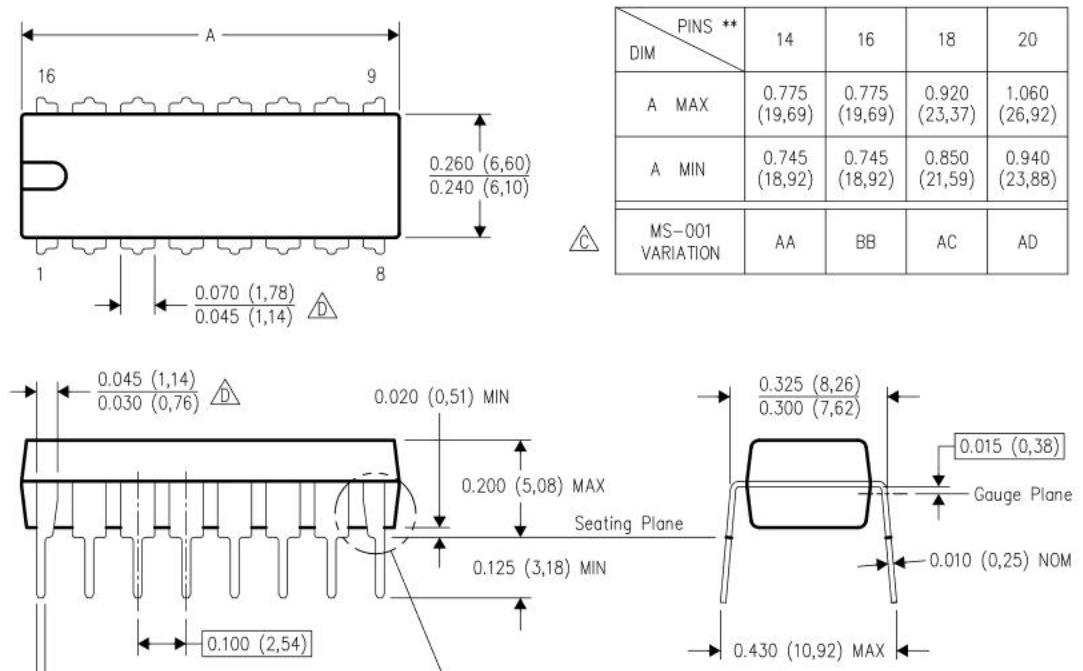
1. DIP: Dual-In-Line Package,. For example: DIP, CDIP, PDIP etc.
2. Q1: Represents the number of signal pins that the package should have(The number of pins of the device which contains remain pin(s))), In the absence of pin, use with Q2
3. [Q2]P: Pin, Q2 The actual number of pins of the device, Use when pin(s) are missing. Q1 is not necessarily the same as Q2. Q1 is the same as Q2, so the plug-in class doesn't have to write Q1, and the semiconductor class doesn't have to write Q2. Generally, Q1 without pin(s) is greater than Q2
4. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
5. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
6. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
7. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
8. PE[X]: Pin Empty, Indicates that the device pin X is empty. This parameter is not used when X is greater than 1
9. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
10. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

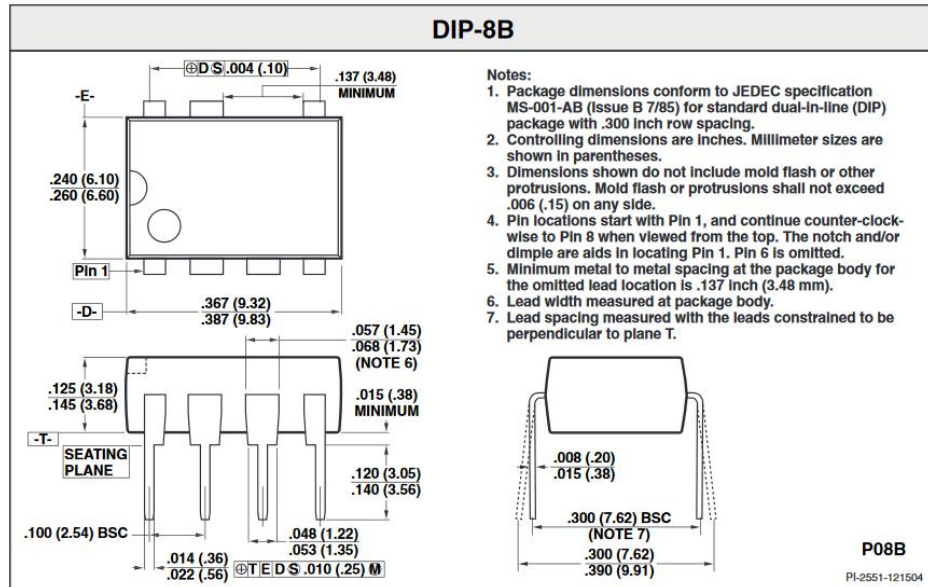
DIP-16\_L21.3-W6.9-P2.54-LS7.6-BL



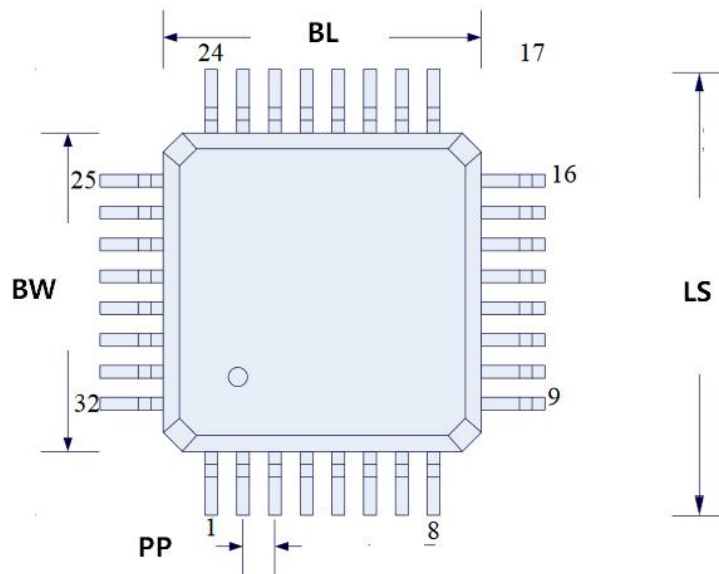
(C347587) DIP-20\_L25.4-W6.4-P2.54-LS7.9-BL



(C26668) DIP-8\_7P-L9.6-W6.4-P2.54-LS7.6-BL-PE6



## 2.4 Quad Flat Pack



Naming format:

QFP-[Q]\_L[BL]-W(BL)-P[PP]-LS[LS]-(TL/TR/BL/BR)-(EP)

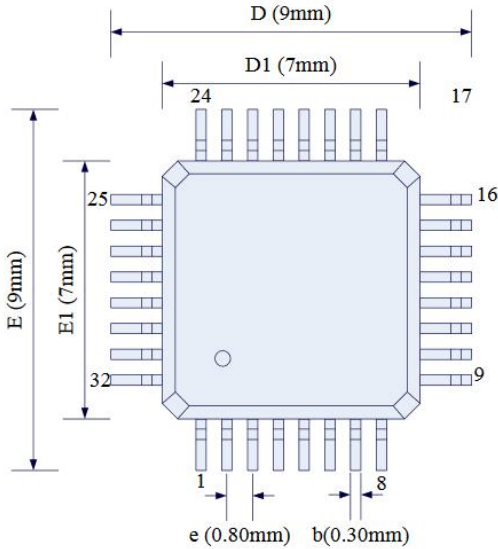
Instructions:

1. QFP: Quad Flat Pack. For example: QFP, LQFP, TQFP etc.
2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink

3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
7. EP: Expose Pad/Extra Pad, For example:bottom heat sink pad. EP2.5 refers to the thermal pad of 2.5mm in length and width, and the size is only used in the same package with different EP sizes; If None-Rectangular pad shape, no need size
8. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin

For example:

(C182129) QFP-32\_L7.0-W7.0-P0.80-LS9.0-BL



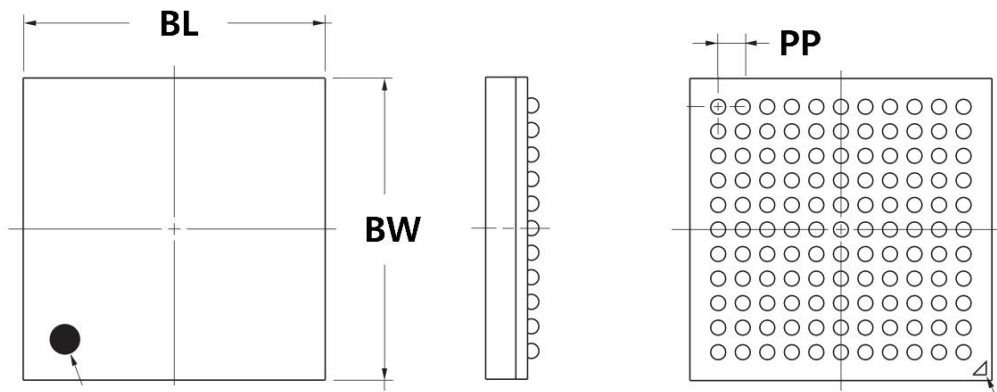
一般尺寸			
测量单位: 毫米/mm			
SYMBOL	MIN	TYP	MAX
A	1.45	1.55	1.65
A1	0.01	-	0.21
A2	1.35	1.40	1.45
A3	-	0.254	-
b	0.30	0.35	0.40
b1	0.31	0.37	0.43
c	-	0.127	-
D	8.80	9.00	9.20
D1	6.90	7.00	7.10
E	8.80	9.00	9.20
E1	6.90	7.00	7.10
e	0.70	0.80	0.90
L	0.43	-	0.71
L	1.00REF		
L1	0.25BSC		
R	0.1	-	0.25
R1	0.1	-	-
?	0°	-	10°

## 2.5 Ball Grid Array, Land Grid Array)

Naming format:

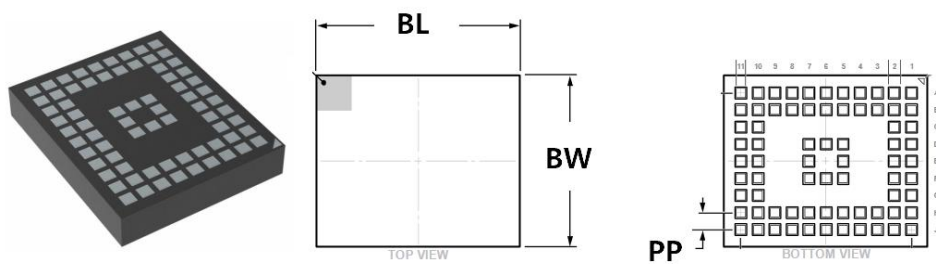
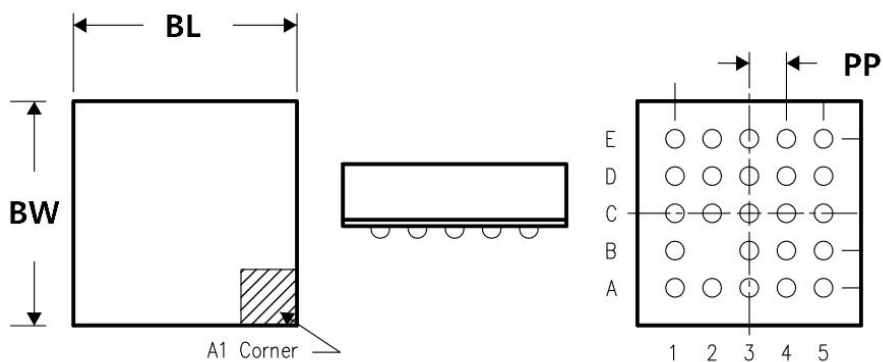
Regular Grid Array(complete arrangement):

[PKT]-[Q]\_L[BL]-W[BW]-R[PR]-C[PC]-P[PP]-(TL/TR/BL/BR)



Other not Regular shape, not regular arrangement of pins , not complete array:

[PKT]-[Q]\_L[BL]-W[BW]-(TL/TR/BL/BR)\_[SN/MPN]



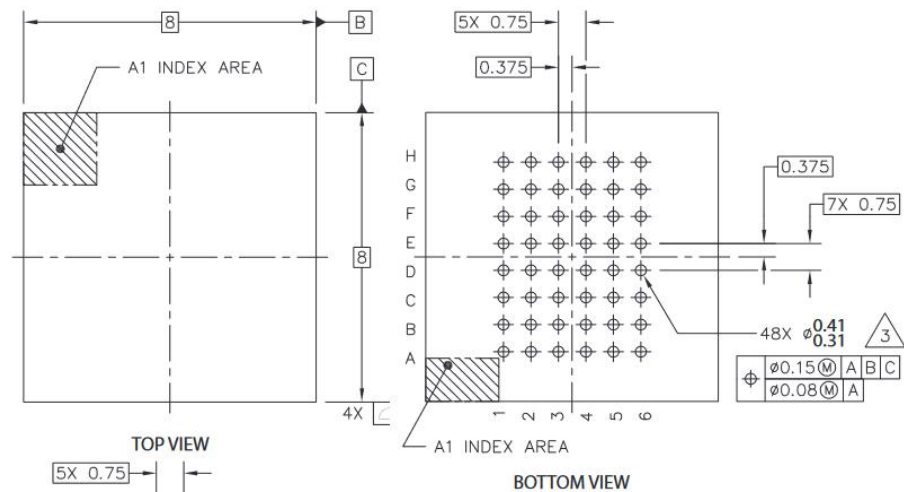
Instructions:

1. PKT: Package Type.
  - a. BGA: Ball Grid Array
  - b. LGA: Land Grid Array
2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal

4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. R[PR]: Pin Rows, When both rows and columns are greater than 1, the uniform regular array distribution is used
6. C[PC]: Pin Columns, When both rows and columns are greater than 1, the uniform regular array distribution is used
7. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
8. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

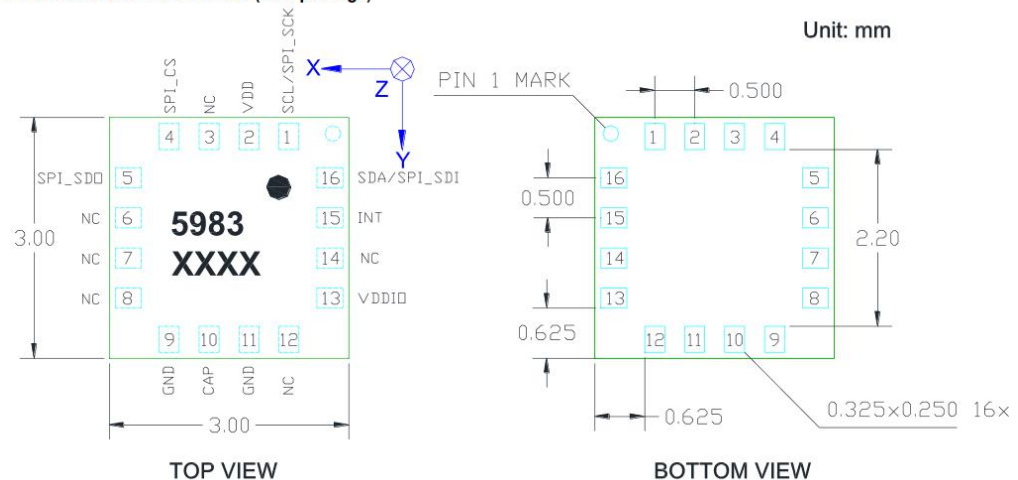
For example:

(C246231) BGA-48\_L8.0-W8.0-R8-C6-P0.75-TL

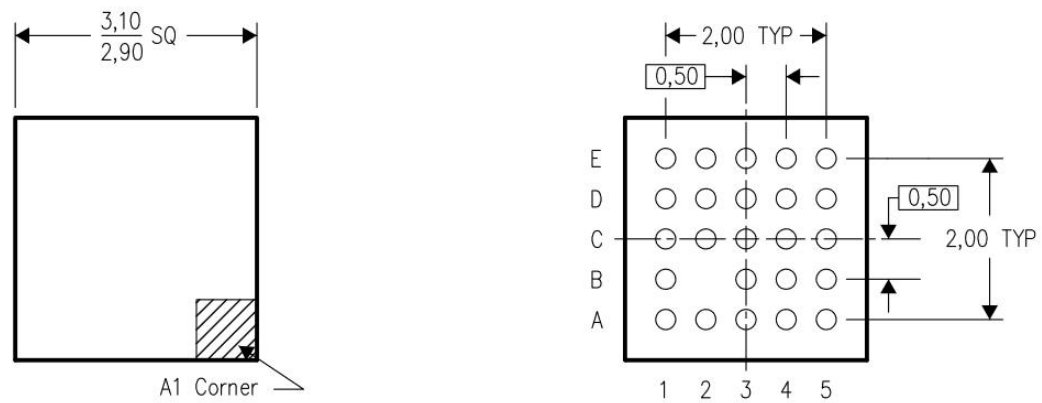


(C404329) LGA-16\_L3.0-W3.0-TL\_MMC598

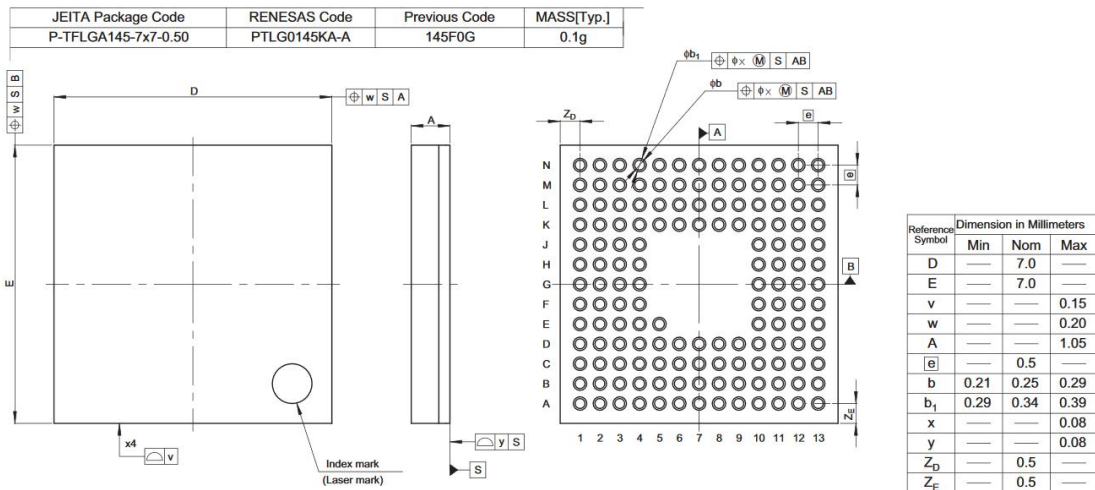
#### PACKAGE DRAWING (LGA package)



(C139350) BGA-24\_L3.0-W3.0-TL\_ZQS



(R7FS3A77C2A01CLJ#AC1) LGA-145\_L7.0-W7.0-BR\_S3A7



(ADUCM355BCCZ) LGA-72\_L6.0-W5.0-TL\_CC-72-2

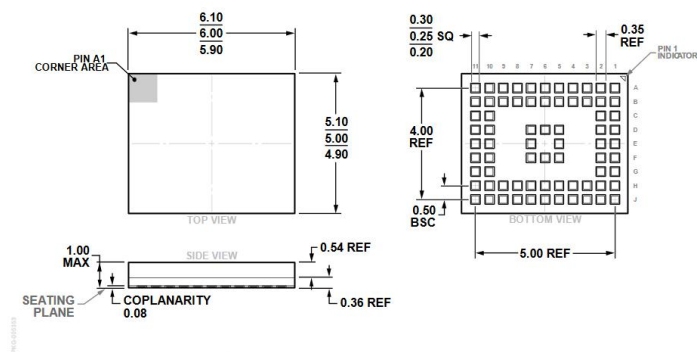
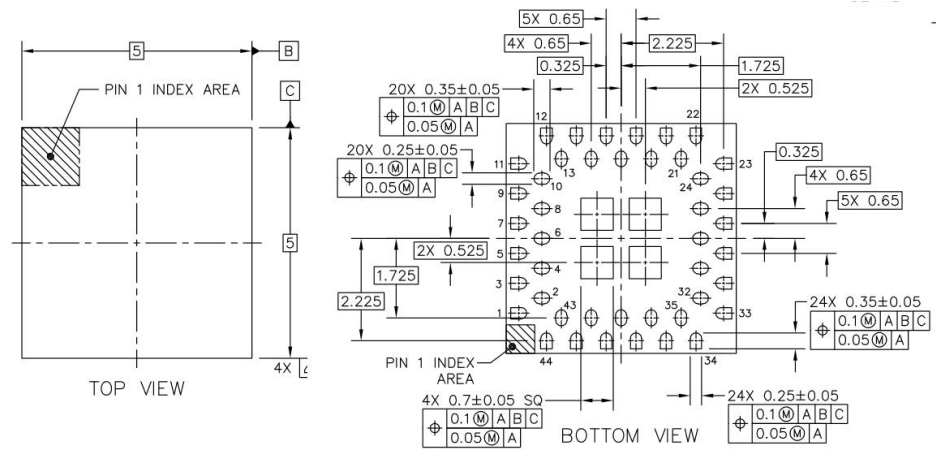


Figure 20. 72-Terminal Land Grid Array [LGA]  
(CC-72-2)  
Dimensions shown in millimeters

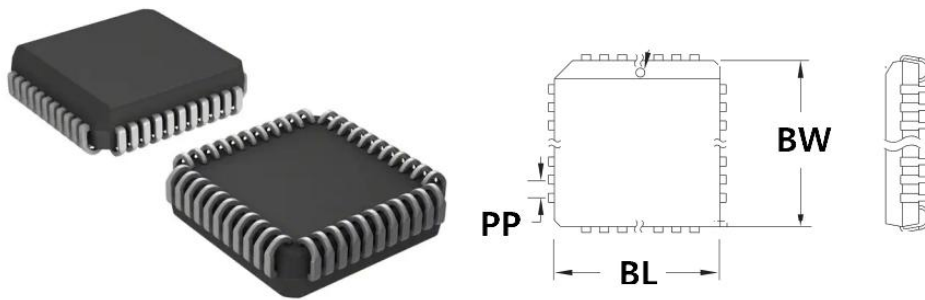
ORDERING GUIDE

Model <sup>1</sup>	Temperature Range	Package Description	Package Option
ADuCM355BCCZ	−40°C to +85°C	72-Terminal Land Grid Array [LGA]	CC-72-2

(C189303) LGA-44\_L5.0-W5.0-TL\_MKM



## 2.6 Leadless Chip Carrier



Regular shape, regular arrangement of pins:

LCC-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)

其他 Irregular shape, pins arranged irregularly:

LCC-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)\_[SN/MPN]

Instructions:

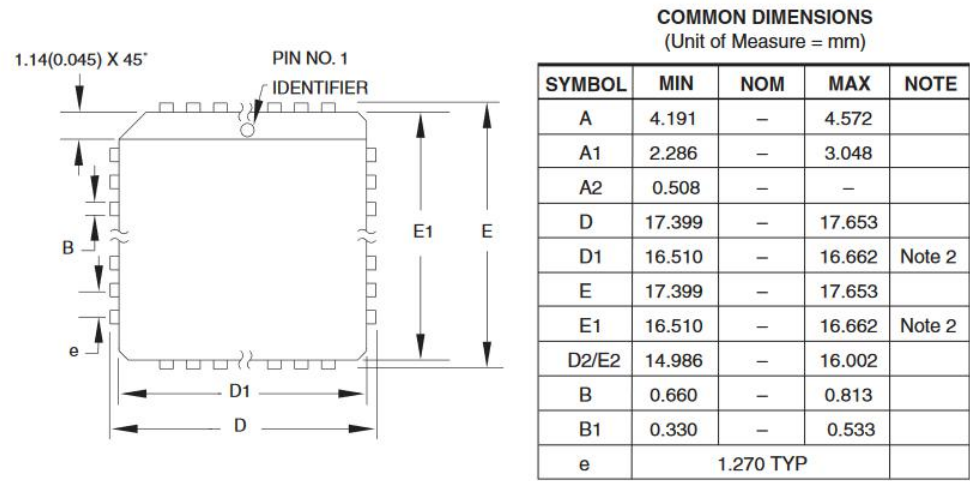
1. LCC: Leadless Chip Carrier. For example: LCC, PLCC etc.
2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default



6. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
7. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
8. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

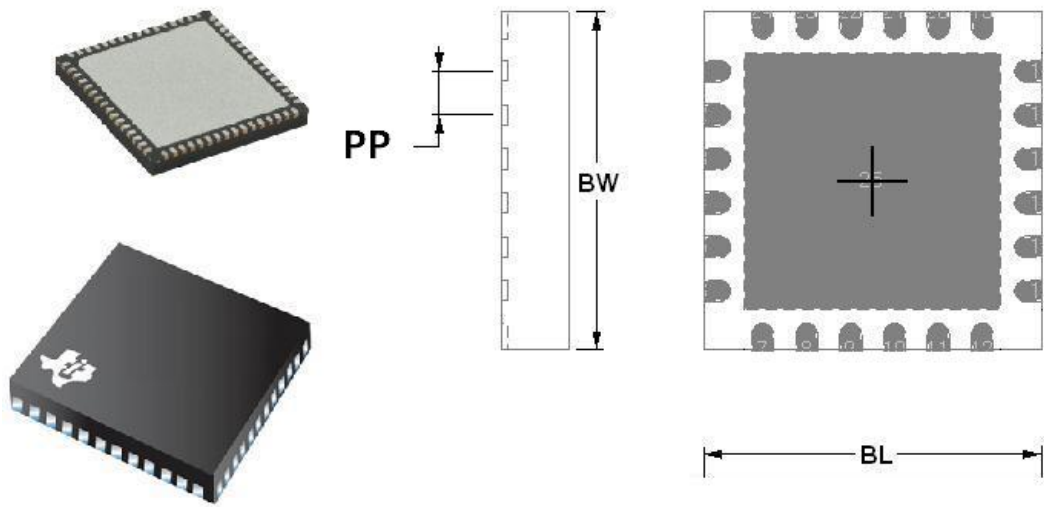
(AT89S51-24JU) LCC-44\_L16.6-W16.6-P1.27-LS17.5-TL



## 2.7 Quad Flat No-lead/Dual Flat No-Lead

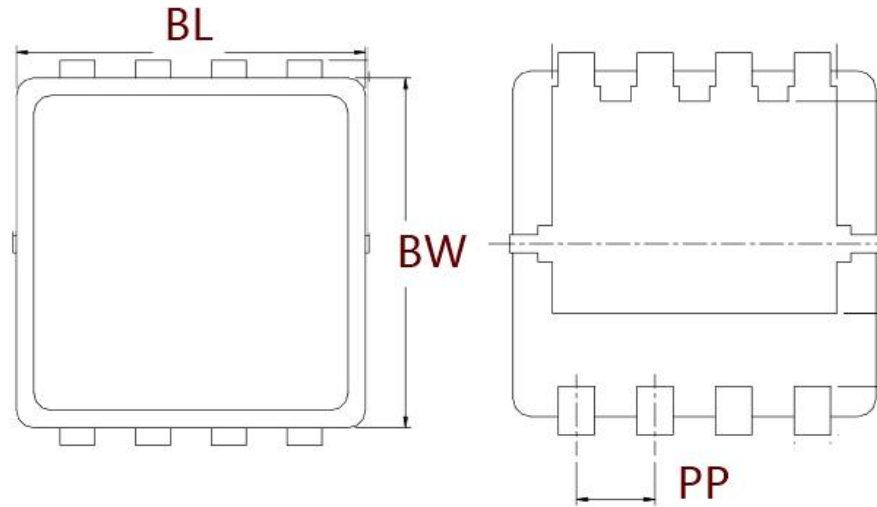
Regular shape, regular arrangement of pins naming format:

[PKT]-[Q]\_L[BL]-W[BW]-P[PP]-(TL/TR/BL/BR)-(EP)



Non-Regular shape, regular arrangement of pins naming format:

[PKT]-[Q]\_L[BL]-W[BW]-P[PP]-LS[LS]-(TL/TR/BL/BR)\_[SN/MPN]

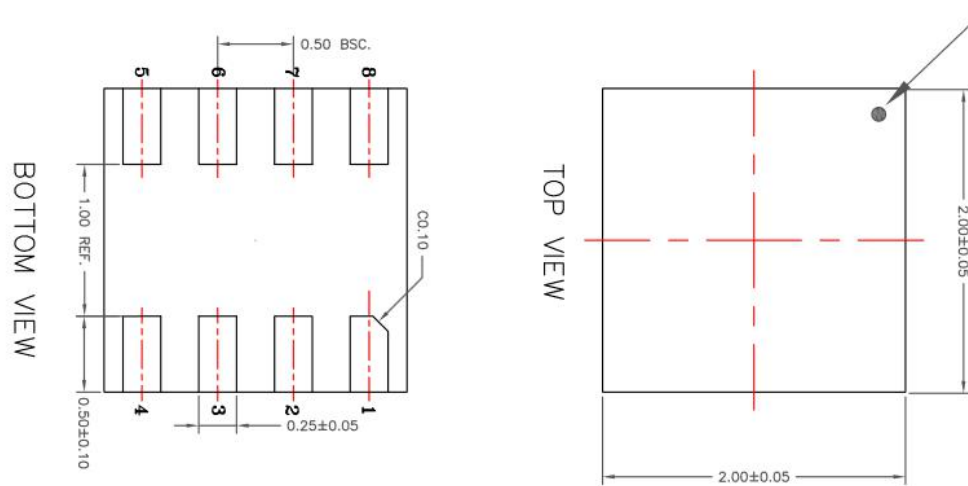


#### Instructions:

1. PKT: Package Type.
  - a. QFN: Quad Flat No-lead. For example: DQFN, TQFN, VQFN, WQFN, UQFN, PQFN etc.
  - b. DFN: Dual Flat No-Lead. For example: TDFN, CDFN, UTDFN, XDFN etc.
2. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
7. TL/TR/BL/BR: Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is on the upper left/upper right/lower left/lower right of the origin
8. EP: Expose Pad/Extra Pad, For example: bottom heat sink pad. EP2.5 refers to the thermal pad of 2.5mm in length and width, and the size is only used in the same package with different EP sizes; if not Rectangular pad, no need size
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

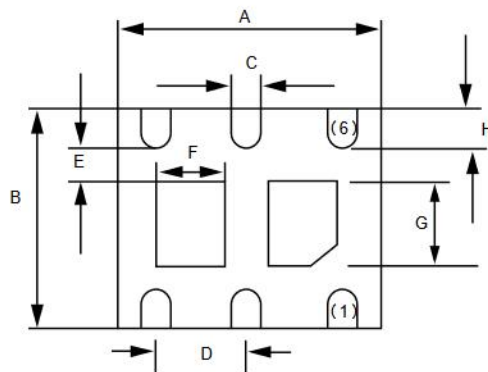
For example:

(C150347) DFN-8\_L2.0-W2.0-P0.50-TL



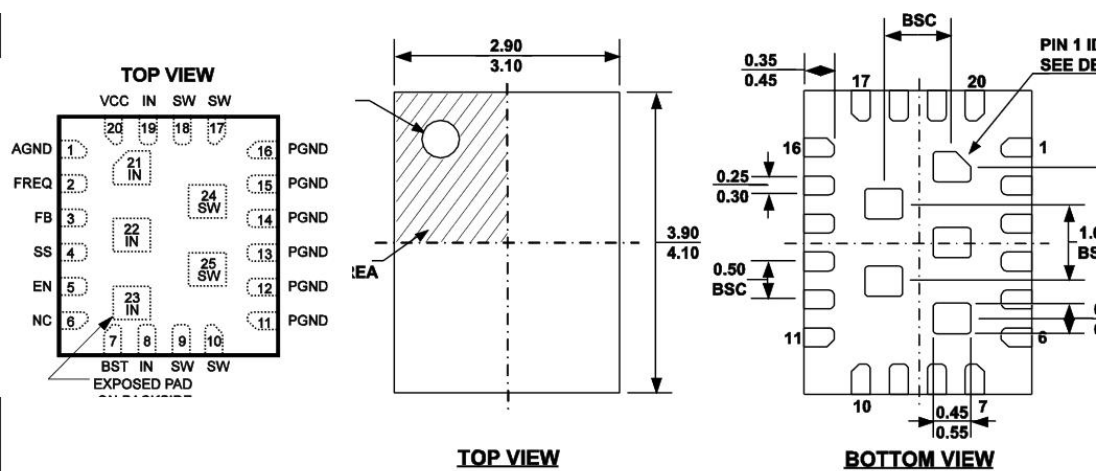
(C110717) DFN-6\_L2.0-W2.0-P0.65-BL\_PNMT6N1B

**Product dimension DFN-6L(2\*2)**



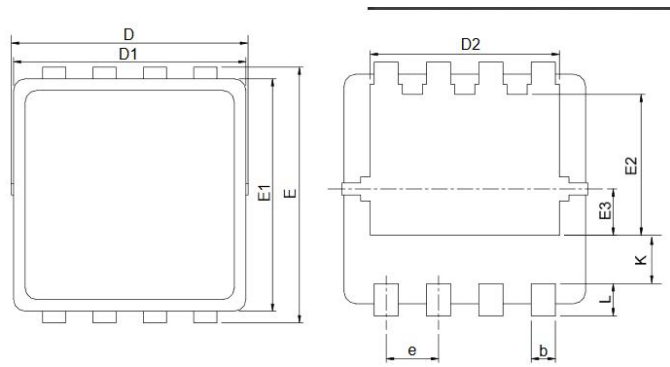
Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.924	2.076	0.076	0.082
B	1.924	2.076	0.076	0.082
C	0.250	0.350	0.010	0.014
D	0.650 (typ.)		0.026 (typ.)	
E	0.200 MIN.		0.008 MIN.	

(C65839) QFN-20\_L4.0-W3.0-P0.50-TL\_MP9447



(C377874) DFN-8\_L3.0-W3.0-P0.65-LS3.2\_WSD

SYMBOL	DFN3x3A-8_EP1_P			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.80	1.00	0.031	0.039
A1	0.00	0.05	0.000	0.002
A3	0.10	0.25	0.004	0.010
b	0.24	0.35	0.009	0.014
D	2.90	3.30	0.114	0.130
D1	2.90	3.10	0.114	0.122
D2	2.25	2.45	0.089	0.096
E	3.10	3.30	0.122	0.130
E1	2.90	3.10	0.114	0.122
E2	1.65	1.85	0.065	0.073
E3	0.56	0.58	0.022	0.023
e	0.65 BSC		0.026 BSC	



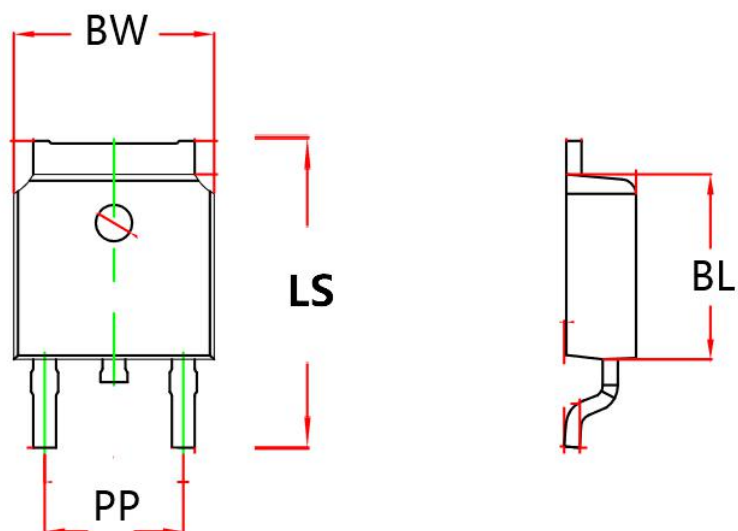
### 3. Other Package Shape Semiconductor

#### 3.1. Standard Package Semiconductor

Transistor, transistors, integrated circuits or other type of semiconductor device package when in line with national standard or international standard naming format as below.

Regular shape, regular arrangement of pins naming format:

[PKT]\_L[BL]-W[BW]-(P[PP])-(LS[LS])-(L/R/T/B/TL/TR/BL/BR)



Non-Regular shape, regular arrangement of pins naming format:

[PKT]\_L[BL]-W[BW]-(P[PP])\_[SN/MPN]

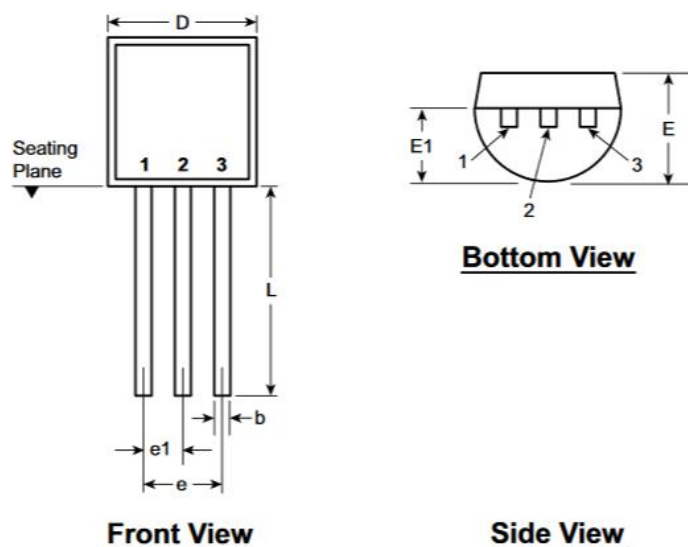
Instructions:

1. PKT: Package Type. . For example: DPAK, TO-39, TO-92-2, TO-92-3, TO-220, TO-220-3, TO-220-5, TO-220F, TO-263, TO-263-3, TO-252, TO-252D etc.
2. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
3. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
4. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
5. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
6. L/R/T/B/TL/BL/TR/BR: Left/Top/Bottom/Right/Top Left/Bottom Left/Top Right/Bottom Right, The first pin of package is Left/Top/Bottom/Right/Top Left/Bottom Left/Top Right/Bottom Right
7. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C148053) TO-92-3\_L5.2-W4.2-P2.67-L

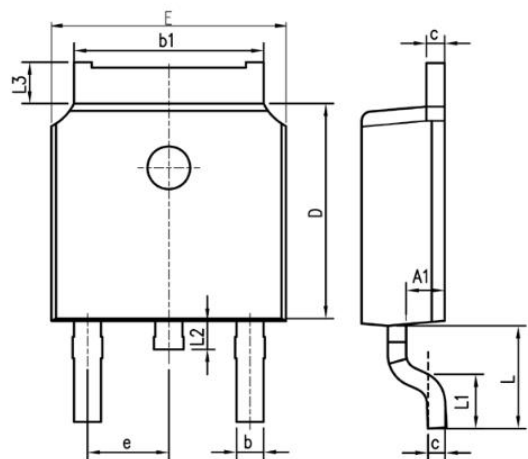
Symbol		A	b	c	D	E	E1	e	e1
Dimensions (inches)	MIN	.170	.014 <sup>†</sup>	.014 <sup>†</sup>	.175	.125	.080	.095	.045
	NOM	-	-	-	-	-	-	-	-
	MAX	.210	.022 <sup>†</sup>	.022 <sup>†</sup>	.205	.165	.105	.105	.055



(C272534) DPAK\_L6.6-W6.1-P4.57-LS5.0-BR

**DPAK**

**单位 Unit: mm**



SYMBOL	mm	
	MIN	MAX
A	2.10	2.50
A1	0.97	1.17
b	0.63	0.93
b1	5.13	5.53
c	0.40	0.60
D	5.80	6.40
E	6.30	6.90
e	2.286BSC	
L	2.50	3.30
L1	1.20	1.80
L2	0.60	1.00
L3	0.85	1.30

**3.2. Non-Standard Package Semiconductor**

**3.2.1 Transistor**

Naming format:

TRS-SMD/TH\_[SN/MPN]

Instructions:

1. TRS: Transistor
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

**3.2.2 Integrated Circuit**

Naming format:

IC/MCU/DRAM-SMD/TH\_[SN/MPN]

Instructions:

1. IC/MCU/DRAM: Integrated Circuit. For example: IC, MCU, DRAM etc.
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

### 3.2.3 Other Semiconductor

Naming format:

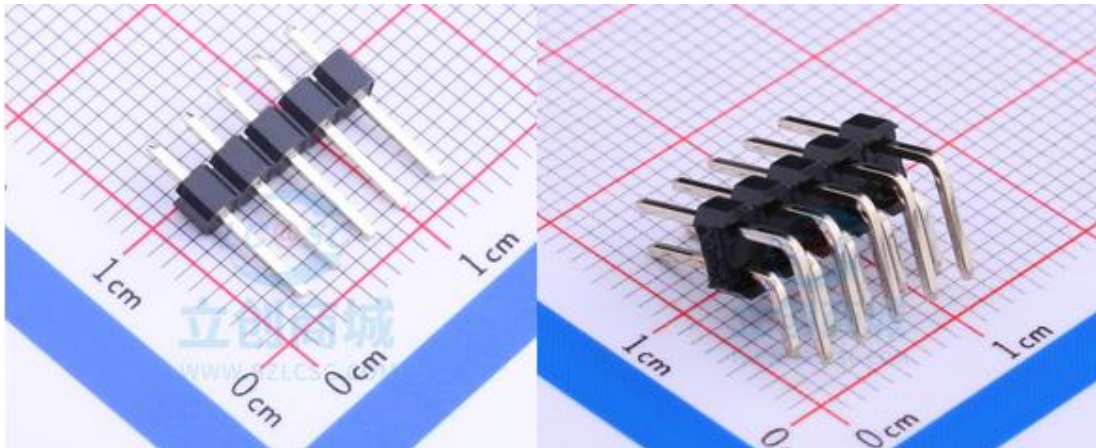
SEMI-SMD/TH\_[SN/MPN]

Instructions:

1. SEMI: Semiconductor
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

## 4. Header and Connector

### 4.1 Standard Header

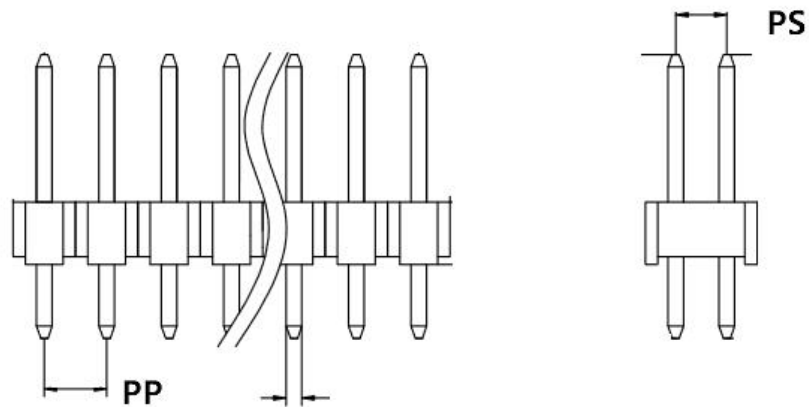


Vertical Type

Horizontal Type

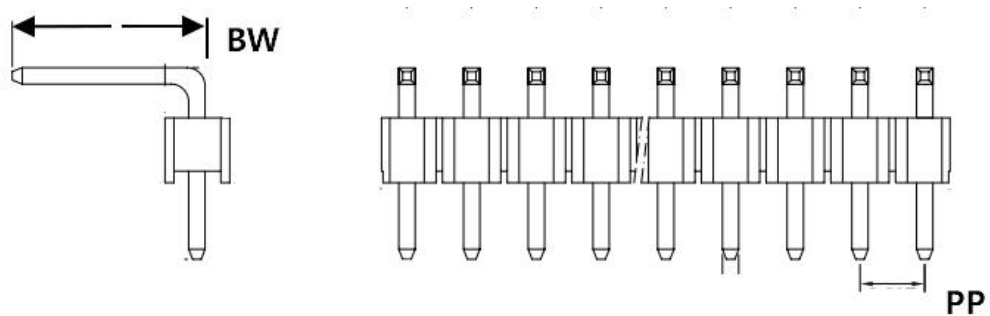
Vertical, Regular arrangement of pins, completely pins:

HDR-SMD/TH\_[Q]P-P[PP]-V/H-R[PR]-C[PC]-S[PS]

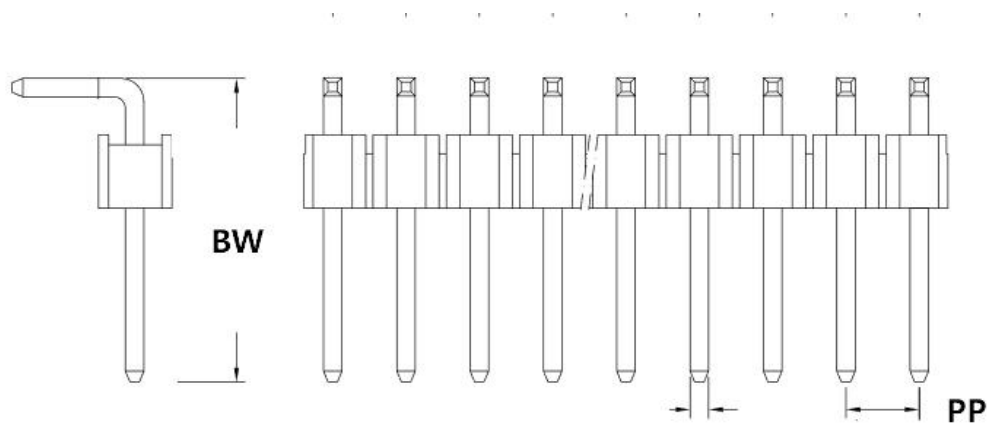


Curved header shape:

HDR-SMD/TH\_[Q]P-P[PP]-V/H-R[PR]-C[PC]-S[PS]-W[BW]



Positive bending type (plastic parts in contact with PCB, single and double row header)



Reverse bending type (plastic parts do not contact PCB, single row of header only)

Instructions:

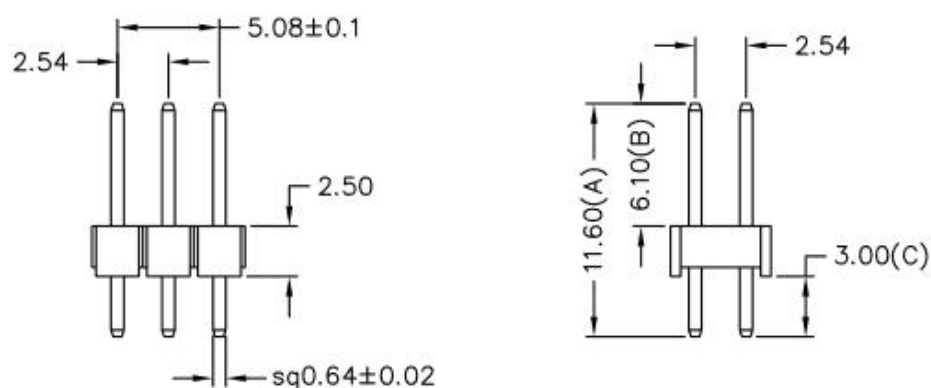
1. HDR: Header
2. SMD/TH: Surface mounted Device/Through Hole Device
3. Q: Quantity Pin, The actual number of pins of the device. For example: 1P, 2P, 8P



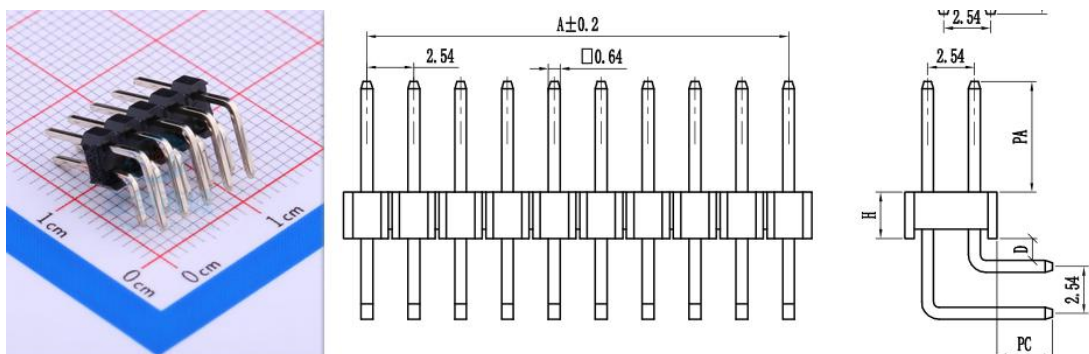
4. V/H: Vertical/Horizontal, External interface of the device is perpendicular to the PCB, the plug-in class name to use/Components of the external interface parallel to the PCB, plug-in class name to use
5. R[PR]: Pin Rows, When both rows and columns are greater than 1, the uniform regular array distribution is used
6. C[PC]: Pin Columns, When both rows and columns are greater than 1, the uniform regular array distribution is used
7. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
8. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time
9. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal.

For example:

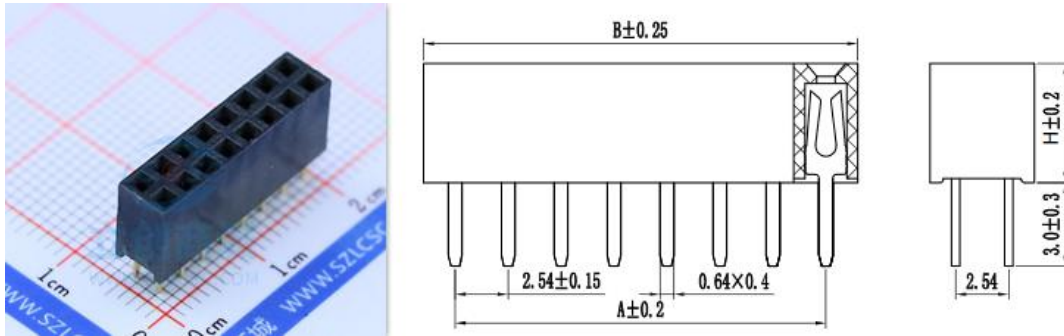
(C402781) HDR-TH\_6P-P2.54-V-R2-C3-S2.54



(C49257) HDR-TH\_10P-P2.54-H-R2-C5-S2.54



(C30734) HDR-TH\_16P-P2.54-V-R2-C8-S2.54



## 4.2 None-Standard Header, Connector

Regular shape, Regular arrangement of pins, Incomplete pins' header and connector:

[PKT]-SMD/TH\_[Q]P-P[PP]\_[SN/MPN]

Non-Regular shape, regular arrangement of pins, none-regular arrangement of pins' header and connector:

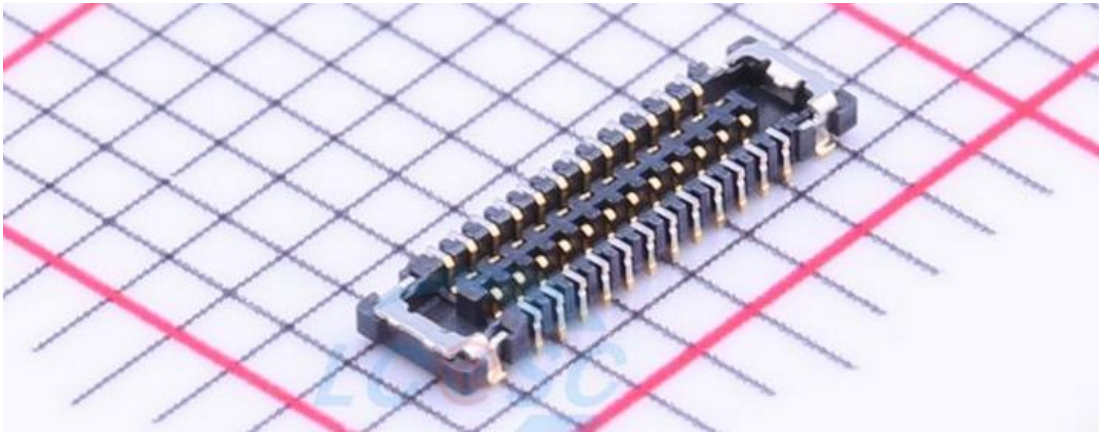
[PKT]-SMD/TH\_[SN/MPN]

Instructions:

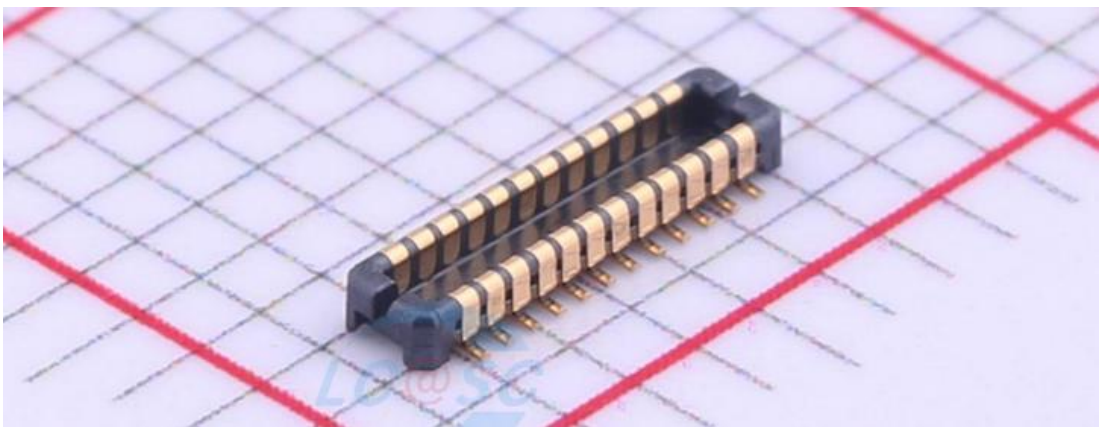
1. PKT: Package Type. For example:
  - a. HDR: Header
  - b. CONN: Connector
  - c. IDC, IDC etc.
2. SMD/TH: Surface mounted Device/Through Hole Device
3. Q: Quantity Pin, The actual number of pins of the device.
4. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

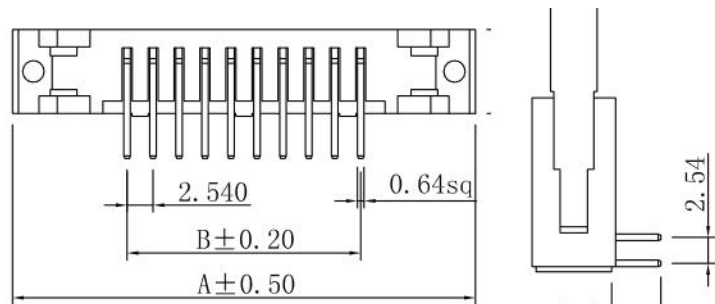
(C127360) CONN-SMD\_24P-P0.40\_504208



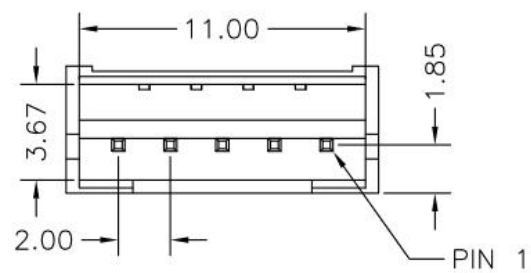
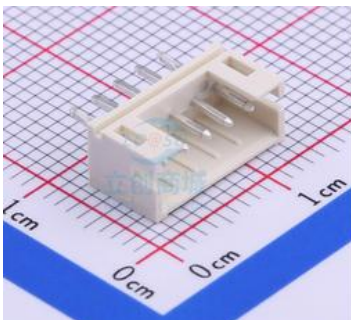
(C324721) CONN-SMD\_24P-P0.40\_DF37-DS



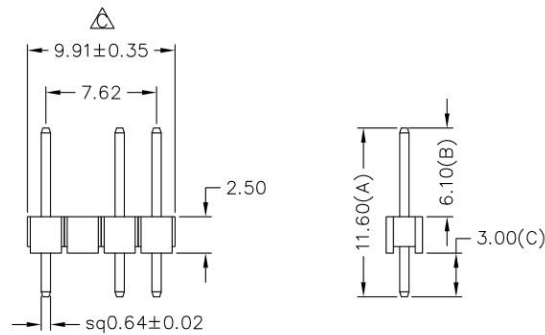
(C146646) IDC-TH\_34P-P2.54\_310R-34P



(C402789) CONN-TH\_5P-P2.00\_721



(C390681) HDR-TH\_3P-P2.54\_210-91-04 (Miss pin 2)



Dielectric Voltage : AC 500V for one minute  
Operation Temperature : -40°C to + 105°C

210-9 1- 04 G B 02  
1 2 3 4 5 6

1. 5: Normal parts (30% Glass fiber PBT)
- 7: Green Product (30% Glass fiber PBT)
- 9: Green Product High Temp (NYLON 9T)
2. 1: Single row
- 2: Dual rows
3. No. of contacts per row
4. G: Gold flash
- S: Selective
- T: Tin plated
5. B: Black Insulator
6. Pinrex internal code.

### 4.3 Special Function Connector

Regular arrangement of pins:

[PKT]-SMD/TH\_[Q]P-P[PP]-(V/H)-(M/F)\_[SN/MPN]

None-Regular arrangement of pins:

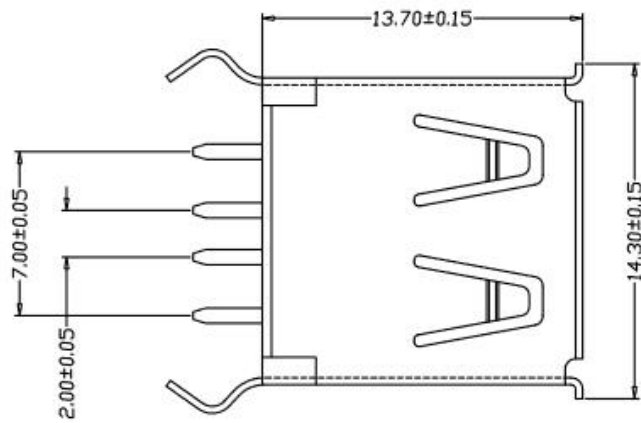
[PKT]-SMD/TH\_[SN/MPN]

Instructions:

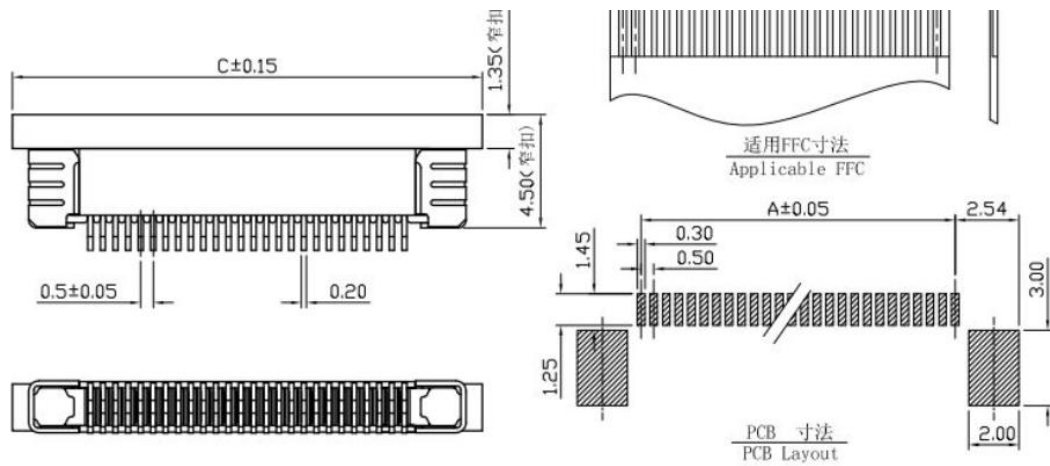
1. PKT: Package Type. For example: AUDIO, DP, DP-MINI, DVI, DSUB, HDMI, HDMI-MINI, USB-A, USB-B, USB-3.0, USB-C, MICRO-USB, RJ45/RJ22/RJ11, VGA, SD, TF, SIM, MICRO-SIM, AC-IN, DC-IN, DC-OUT, FFC, FPC, FIBER, RF, DIMM, ATX, PCI, SATA, ATA, HD, PS2, LVDS, WLAN, LPC etc.
2. SMD/TH: Surface mounted Device/Through Hole Device
3. Q: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. V/H: Vertical/Horizontal, External interface of the device is perpendicular to the PCB, the plug-in class name to use/Components of the external interface parallel to the PCB, plug-in class name to use
5. M/F: Male/Female, plug-in class name to use
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C39456) USB-A-TH\_4P-P2.00-V-F\_USB-AF-13.7-180-PBT

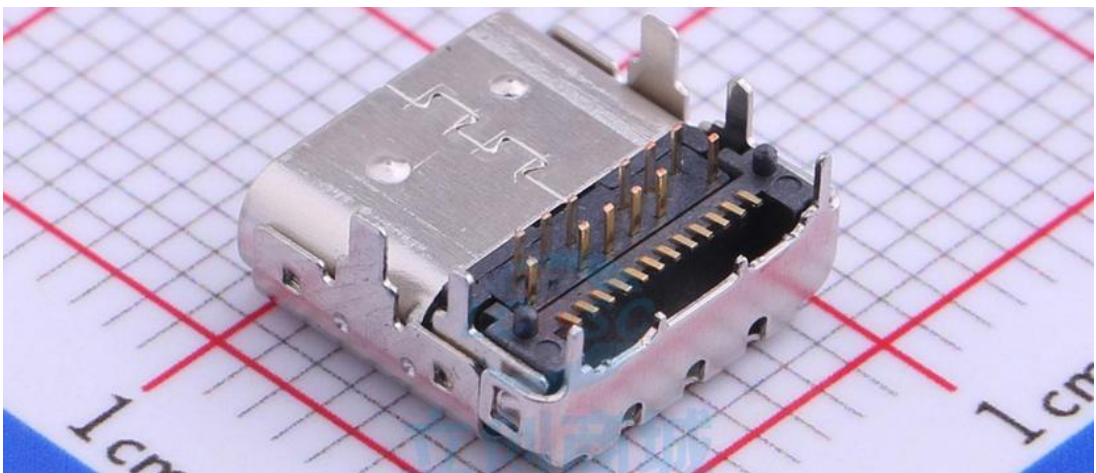


(C53058) FPC-SMD\_45P-P0.50\_AFC07-S45FCC-00

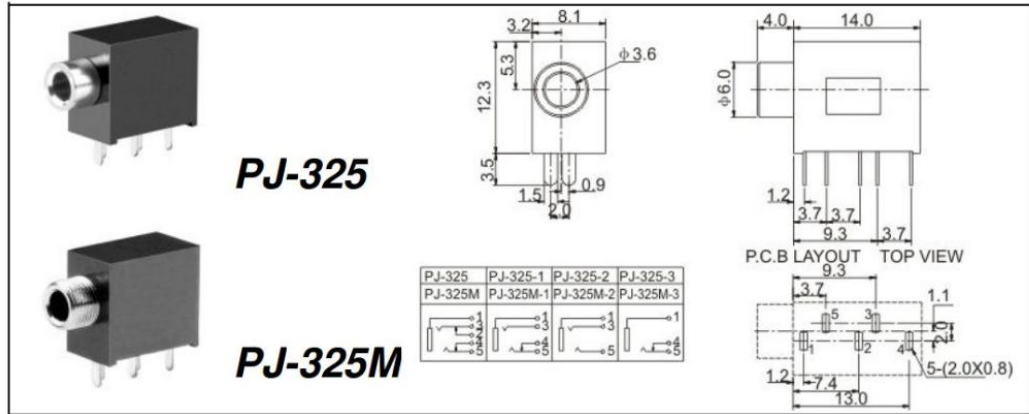


0.10

(C309354) USB-C-SMD\_USB-306E-B-SU



(C26230) AUDIO-TH\_PJ325



## 5. Other Discrete Devices

### 5.1 Optocoupler

Naming format:

OPTO-SMD/TH\_[SN/MPN]

Instructions:

1. OPTO: Optocoupler
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

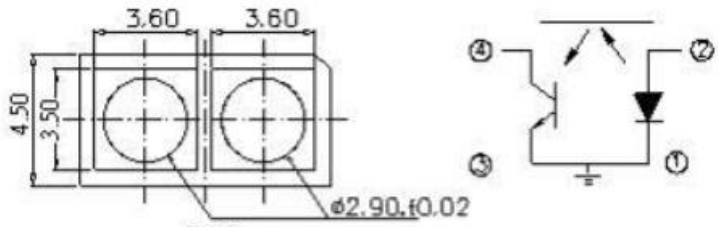
For example:

(C390040) OPTO-TH\_DY-ITR9909



型 号 Model :	DY-ITR9909	页 4
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一、 外形图 Outline dimensions:



### 5.2 Relay

Naming format:

RELAY-SMD/TH\_[PKT/SN/MPN]

Instructions:

1. RELAY: Relay
2. SMD/TH: Surface mounted Device/Through Hole Device
3. PKT: Package Type
4. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C27840, HK3FF-DC5V-SHG) RELAY-TH\_HK3FF-DCXXV-XXC ( C contact form)





## 5.4 Antenna

Rectangular shape(on top view), Regular arrangement of pins:

ANT-SMD/TH\_<sub>[(Q)P]</sub>-L[BL]-W[BW]-(P[PP])

Other shape:

ANT-SMD/TH\_<sub>[SN/MPN]</sub>

Instructions:

1. ANT: Antenna
2. SMD/TH: Surface mounted Device/Through Hole Device
3. [Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
5. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
6. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
7. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

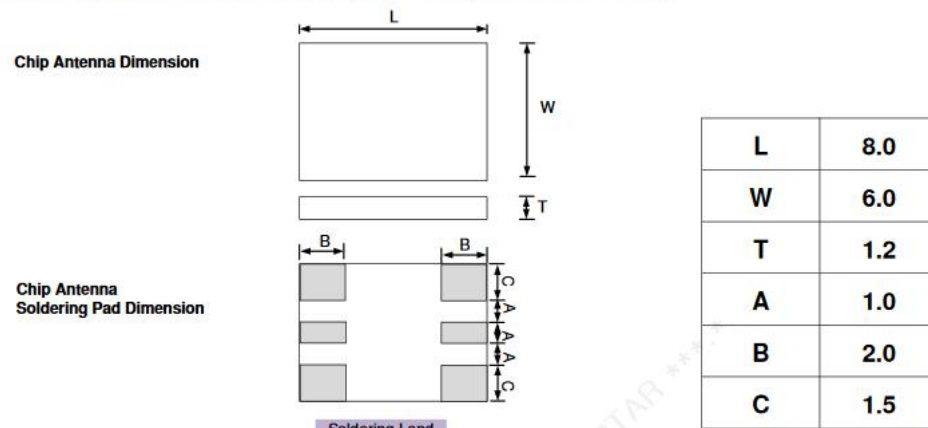
(C370396) ANT-SMD\_L3.2-W1.6

### PRODUCT IDENTIFICATION

<u>SLDA</u> ①		<u>31</u> ②	<u>-2R800G</u> ③	<u>-S1</u> ④	<u>T</u> ⑤	<u>F</u> ⑥
①		②		③		
Type		(L×W) (mm)		Center Frequency		
SLDA		External Dimensions (L×W) (mm)		Example	Nominal Value	
		21	2.0×1.2	2R800G	2800.0MHz	
		31	3.2×1.6	2R450G	2450.0MHz	

(C224424) ANT-SMD\_6P-L8.0-W6.0-P2.00

■ **MECHANICAL DIMENSION** (unit : mm, tolerance :  $\pm 0.1$ )



## 5.5 Transformer

Naming format:

XFMR-SMD/TH\_[SN/MPN]

Instructions:

1. XFMR: Transformer
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

## 5.6 Battery

Naming format:

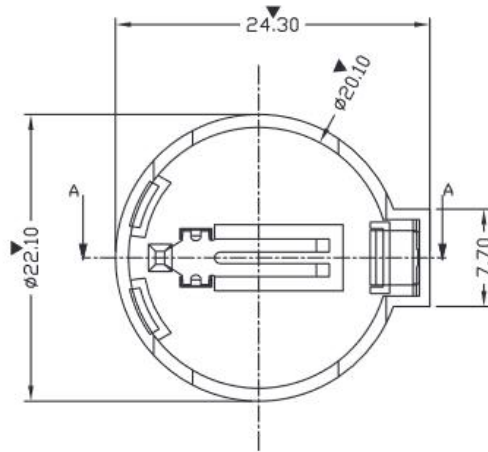
BAT-SMD/TH\_[SN/MPN]

Instructions:

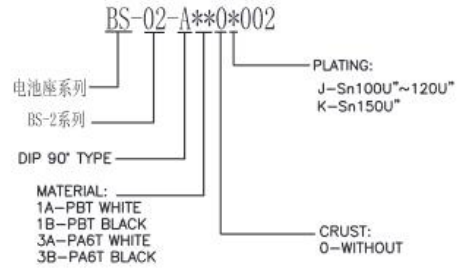
1. BAT: Battery
2. SMD/TH: Surface mounted Device/Through Hole Device
3. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C70376, BS-2-1) BAT-TH\_BS-02-X



## ORDERING INFORMATION



## 5.7 Buzzer/Speaker/Microphone

Cylindrical :

BUZ/PSK/MIC-SMD/TH\_<sub>([Q]P)</sub>-BD[BD]-P[PP]-D[PD]-L/R-(FD/RD)

Rectangular Shape(on bottom view):

BUZ/PSK/MIC-SMD/TH\_<sub>([Q]P)</sub>-L[BL]-W[BW]-(P[PP])-LS[LS]-L/R-(FD/RD)

Other shape:

BUZ/PSK/MIC-SMD/TH\_<sub>[SN/MPN]</sub>

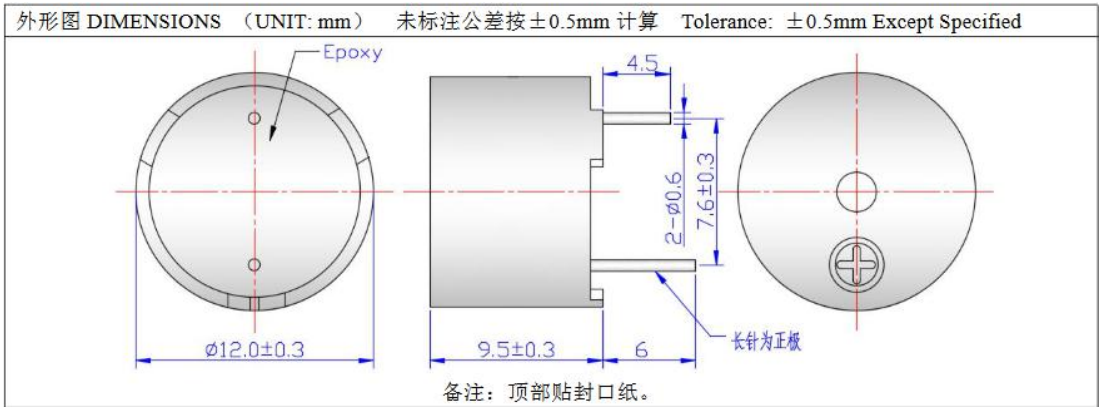
Instructions:

1. BUZ/PSK/MIC: Buzzer/Speaker/Microphone
2. SMD/TH: Surface mounted Device/Through Hole Device
3. [Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. D[PD]: Pin Diameter. In a decimal places, annotation is two decimal places after carry a decimal
5. BD[BD]: Body Diameter, Cylindrical device/axial device diameter. Take a decimal
6. P[PP]: Pin Pitch, Take two decimal places. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
7. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
8. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
9. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
10. L/R: Left/Right, the first pin of package is on the left/right
11. FD/RD: Forward Direction/Reverse Direction, The polarity direction is from left to right/The polarity direction is from right to left

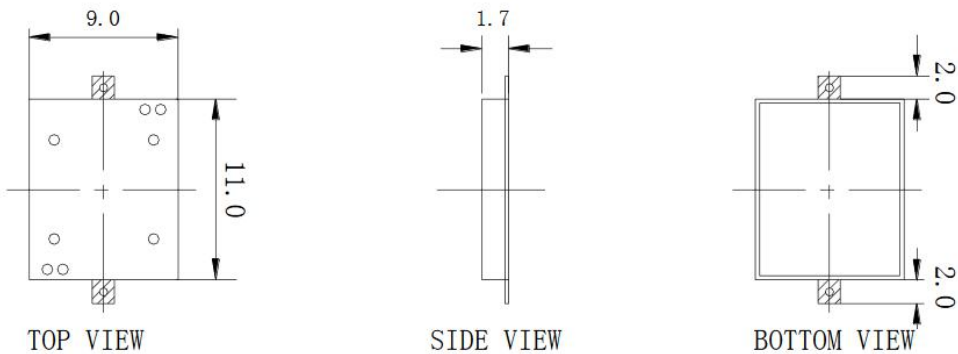
12. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

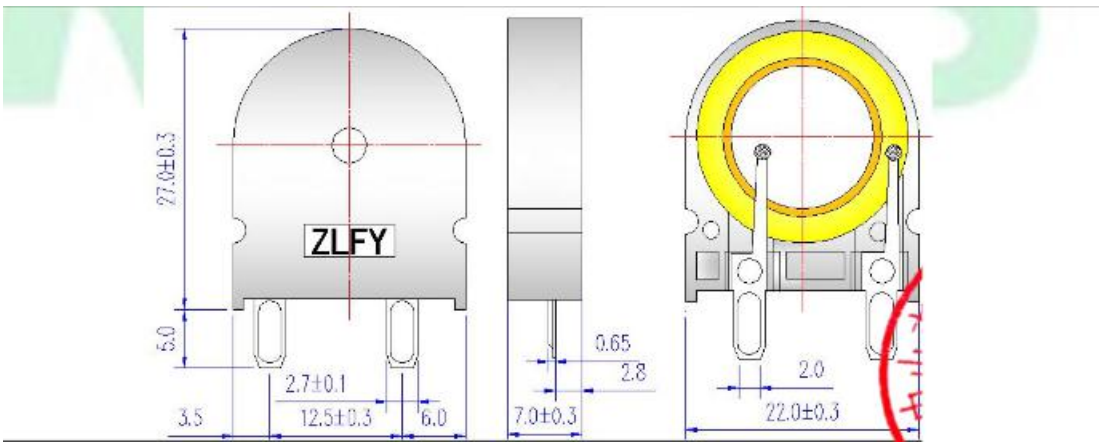
(C96093) BUZ-TH\_BD12.0-P7.60-D0.6-L-FD



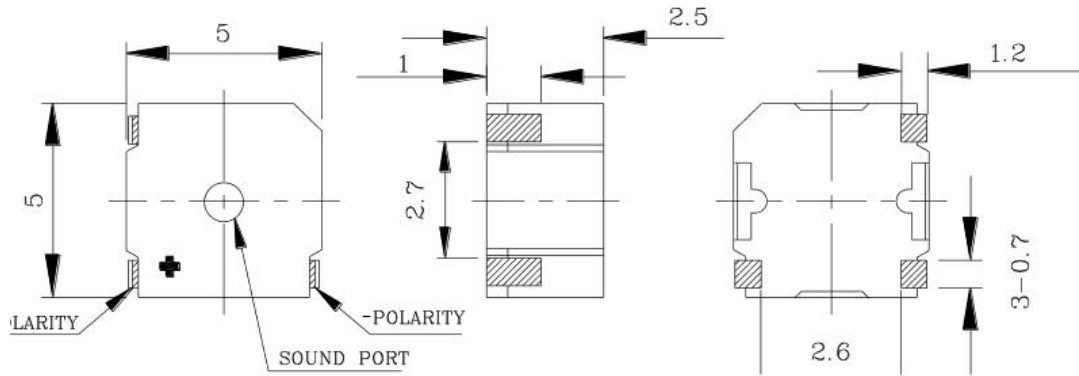
(C201047) BUZ-SMD\_L11.0-W9.0-LS15.0-L



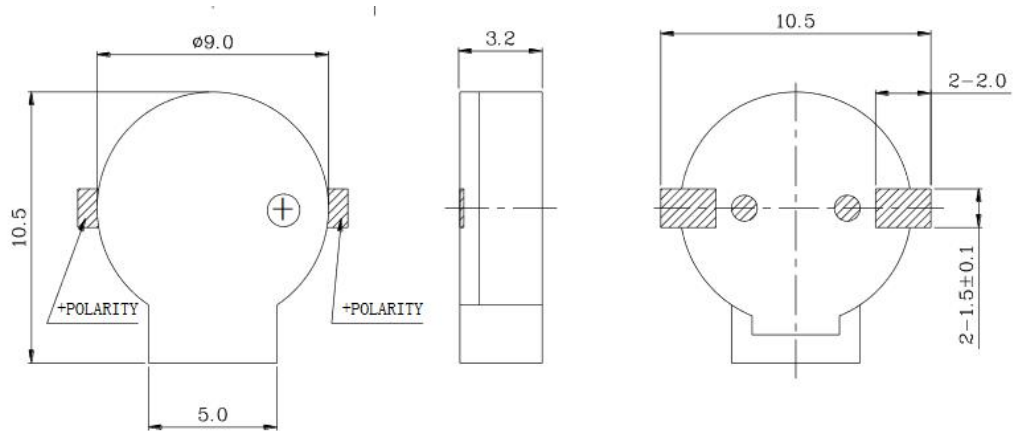
(C219736) BUZ-SMD\_L19.5-W7.0-P12.50-L



(C201046) BUZ-SMD\_3P-L5.0-W5.0-P3.80-BL



(C201039, KLJ-9032-3627) BUZ-SMD\_KLJ-90XX-3627



## 5.8 Switch/Key

Regular shape, regular arrangement of pins naming format:

SW/KEY-SMD/TH\_[Q]P-L[BL]-W[BW]-P(PP)-LS[LS]-(EH)

None-Regular shape, regular or none- regular arrangement of pins naming format:

SW/KEY-SMD/TH\_[SN/MPN]

Instructions:

1. SW/KEY: Switch/Key
2. SMD/TH: Surface mounted Device/Through Hole Device
3. [Q]P: Quantity Pin, The actual number of pins of the device. Only when Q is greater than 2, Q does not include positioning pin(s) and heat sink
4. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
5. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal

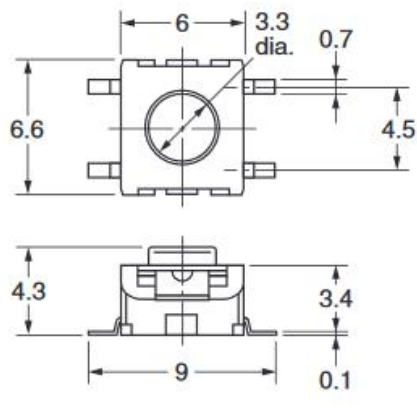
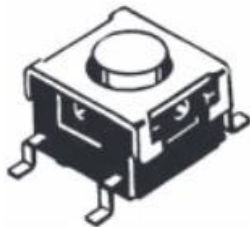
6. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
7. LS[LS]: Lead Span, the spans at both ends of the left and right rows of pins
8. EH: Extra Hole/Positioning Hole. In the same package name, there are difference when using positioning hole
9. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

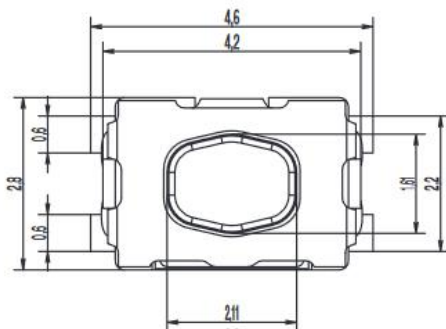
(C271751) KEY-SMD\_4P-L6.6-W6.0-P4.50-LS9.0

## Without Ground Terminal

**B3S-1000**  
**B3S-1002**

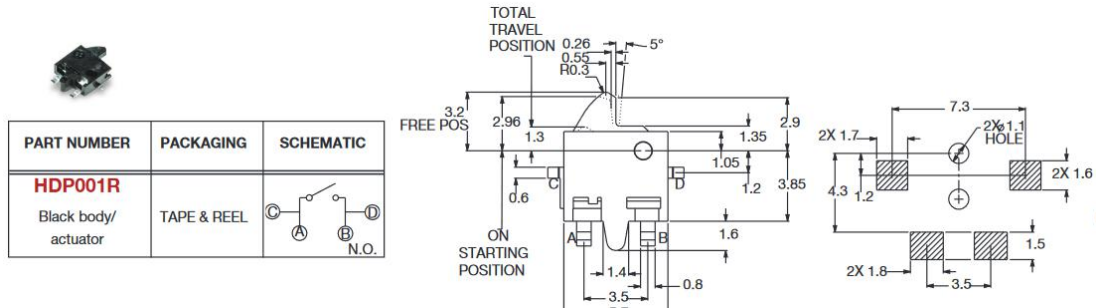


(C221693) KEY-SMD\_4P-L4.2-W2.8-P1.60-LS4.5



<b>KMR6</b>
H = 1.9 mm
IP67

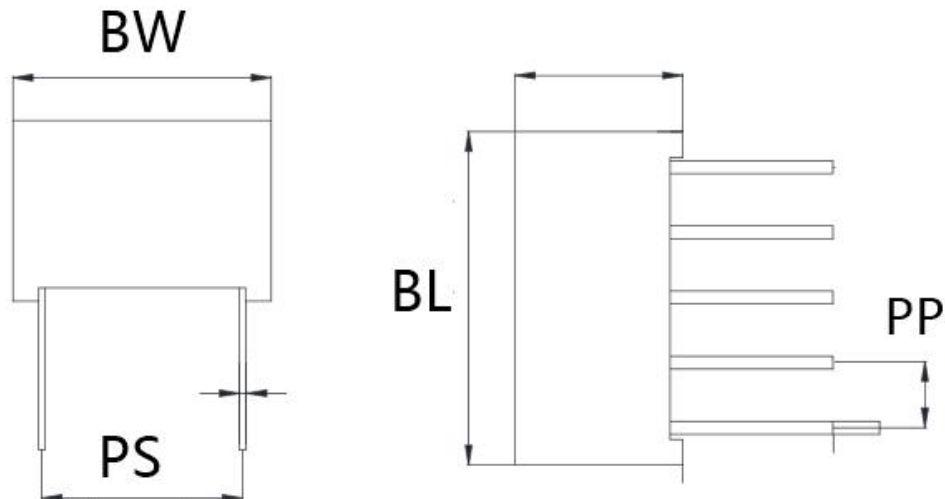
(C221646, HDP001R) SW-SMD\_HDP001R



## 5.10 LED Segement

Regular shape, regular arrangement of pins naming format:

LED-SEG-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]-S[PS]-TL/TR/BL/BR



Non-Regular shape, regular arrangement of pins naming format:

LED-SEG-SMD/TH\_[SN/MPN]

Instructions:

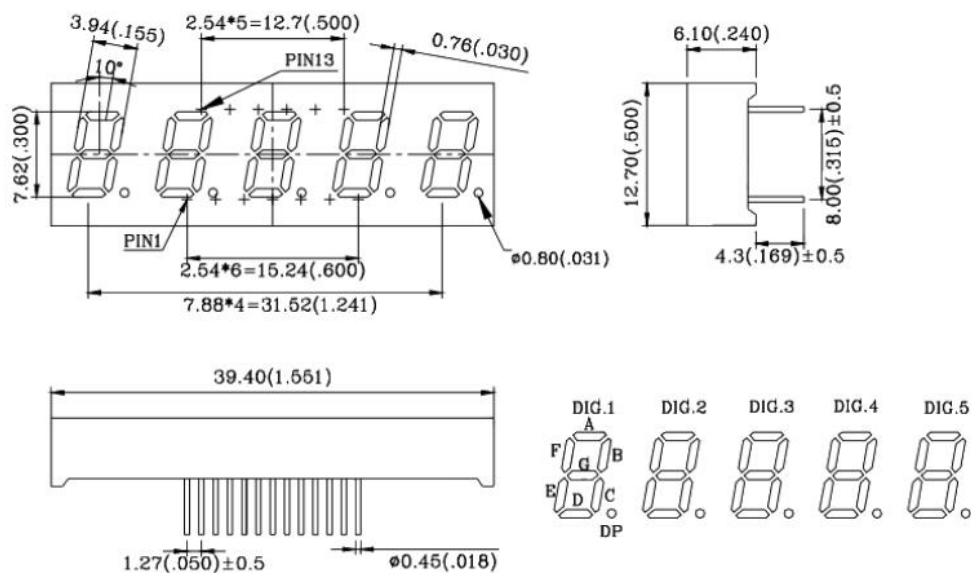
1. LED-SEG: LED Segement
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. S[PS]: Pin Spacing, Another pin pitch of the device, taking two decimal places. Used only when P[PP] is present at the same time



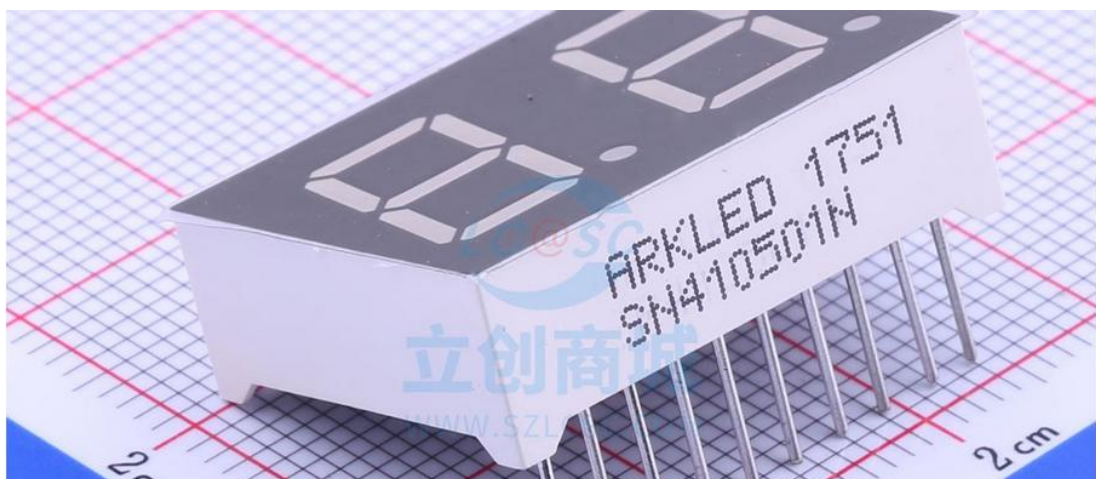
7. L/R/TL/TR/BL/BR: Left/Right/Top Left/Top Right/Bottom Left/Bottom Right, The first pin of the package is left/right/top left/top right/bottom left/bottom right of the origin
8. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

For example:

(C401127) LED-SEG-TH\_26P-L39.4-W12.7-P1.27-S8.00-BL



(C143235) LED-SEG-TH\_SN410501N



## 5.11 Sensor Module

Regular shape, regular arrangement of pins naming format:

SENSORM-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]



Non-Regular shape, regular arrangement of pins naming format:

SENSORM-SMD/TH\_[SN/MPN]

Instructions:

1. SENSORM: Sensor Module
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

## 5.12 Power Module

Regular shape, regular arrangement of pins naming format:

PWRM-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]

Non-Regular shape, regular arrangement of pins naming format:

PWRM-SMD/TH\_[SN/MPN]

Instructions:

1. PWRM: Power Module
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

## 5.13 Communication Module

Regular shape, regular arrangement of pins naming format:

COMM-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]

None-Regular shape, regular arrangement of pins naming format:

COMM-SMD/TH\_[SN/MPN]

Instructions:

1. COMM: Communication Module
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

#### **5.14 Wireless Module)**

Regular shape, regular arrangement of pins naming format:

WIRELM-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]

None-Regular shape, regular arrangement of pins naming format:

WIRELM-SMD/TH\_[SN/MPN]

Instructions:

1. WIRELM: Wireless Module
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

#### **5.15 GSM/GPRS/GPS/Bluetooth/Wifi Module**

Regular shape, regular arrangement of pins naming format:

GSM/GSM/GPRS/GPRS/GPS/GPS/Bluetooth/Wifi/Wifi-SMD/TH\_[Q]P-L[BL]-W[BW]-P[PP]

None-Regular shape, regular arrangement of pins naming format:

GSM/GPSM/BULETM/WIFIM-SMD/TH\_[SN/MPN]

Instructions:

1. GSM/GPSM/BULETM/WIFIM: GSM/GPRS/GPS/Bluetooth/Wifi Module
2. SMD/TH: Surface mounted Device/Through Hole Device
3. L[BL]: Body Length, Default is the length of the device in 0 degree direction, take a decimal
4. W[BW]: Body Width, Default is the short of the device in 0 degree direction, take a decimal
5. P[PP]: Pin Pitch, Take two decimal places. When the SMD type only has two pins, do not use this parameter. If the axial type is not specified the pin pitch, L[BL]+4mm is taken by default
6. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN

### **5.16 Unknow Class/Unknow Package Type Devices**

Naming format:

[SN/MPN]

Instructions:

1. SN/MPN: Serial Number/Manufacture Part Number, Device family name/The manufacturer's material name of the device. Use X instead of the variable parameter in SN